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REMEDIATION SYSTEM UPGRADE FOR THE SECO PRODUCTS FACILITY WASHINGTON, MISSOURI

April 15, 1997

Z-370-02

Prepared for: Hussmann Corporation

12999 St. Charles Rock Road

Bridgeton, Missouri

Prepared by: Shannon & Wilson, Inc.

11500 Olive Boulevard St. Louis, Missouri



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SEATTLE RICHLAND FAIRBANKS ANCHORAGE SAINT LOUIS BOSTON

Ms. Stephanie Doolan
Project Coordinator
U.S. Environmental Protection Agency, Region VII
RCRA Permits and Compliance Branch
726 Minnesota Avenue
Kansas City, Kansas 66101

REMEDIATION SYSTEM UPGRADE FOR THE SECO PRODUCTS FACILITY WASHINGTON, MISSOURI

Dear Ms. Doolan:

This report is submitted by Shannon & Wilson, Inc. on behalf of our client, Hussmann Corporation, for the above referenced site. This report, developed in response to the Modification of Corrective Action (Docket No. VII-89-H-0018), presents the activities associated with the abandonment of existing monitoring wells, installation of two new recovery wells along the south side of the property, and replacement of recovery well RW-1 at the Seco Products Facility in Washington, Missouri.

Please call if you have any questions or comments concerning the contents of this report.

Very truly yours,

SHANNON & WILSON, INC.

Lawrence C. Rosen, RG

Principal Geologist

Attachments: Remediation System Upgrade for the Seco Products Facility, Washington, Missouri

Important Information About Your Environmental Engineering Report

Submitted: 4 Copies

Copies: Mr. Dennis Dubitsky, Hussmann Corporation

Mr. Paul Wilson, Patton, Boggs, & Blow

Mr. Bruce Stuart, Missouri Department of Natural Resources

Mr. Rick Runyun, Seco Products

DJM:LCR/nlb

SHANNON & WILSON, INC.

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EXECUTIVE SUMMARY

The purpose of this report is to present a summary of the Phase II activities performed at the SECO Products Facility in Washington, Missouri. Phase II work, begun in February 1996, included replacement of RW-1 and the abandonment of wells no longer required to be monitored. The replacement well for RW-1 installed in February 1996 did not meet production requirements, and it was replaced by a new recovery well in September 1996. Two new recovery wells along the southern side of the site were also installed as part of the Phase II work.

REMEDIATION SYSTEM UPGRADE FOR THE SECO PRODUCTS FACILITY WASHINGTON, MISSOURI

1.0 INTRODUCTION

This report was developed per the Modification of Corrective Action (Docket No. VII-89-H-0018) reporting schedule. This report presents the results of Phase II work performed at the Seco Products Facility in Washington, Missouri (Plate 1).

2.0 GROUNDWATER RECOVERY SYSTEM

2.1 Introduction

Five groundwater recovery wells, RW-1 to RW-5 were installed at the locations shown on Plate 2, and the groundwater recovery system began operations on January 29, 1990. The planned upgrade of this system was submitted to U.S. Environmental Protection Agency (EPA) in a work plan for Phase II work, and approved by EPA in November 1995. The plan included abandonment of six existing monitoring wells, replacement of RW-1, and installation of two new recovery wells along the southern perimeter of the site.

2.2 Monitoring Well Abandonment

Abandonment of six groundwater monitoring wells (MD-1, MD-2, SS-1, SS-2, SS-3, and MW-1) was approved by EPA. Variance #00401 was granted by the Missouri Department of Natural Resources (MDNR) Wellhead Protection Section for abandoning wells by pulling the riser and screen rather than drilling out the well. Abandoned wells are shown on Plate 2 in half-tone.

Before pulling well MD-1, the bottom of the well was knocked out, and the casing was filled with grout. Additional grout was added as needed during the pull. The well separated approximately four feet below ground surface (bgs) at the joint connecting the riser pipe and screen. The hole was then grouted to the surface. The same procedure was followed at each of the other wells approved for abandonment; however, at MW-1 and SS-1, the entire length of riser and screen were removed. Each location was observed for grout settlement and topped off as needed. Registration of well abandonment was sent to the MDNR Wellhead Protection Section.

In addition, the original RW-1 was abandoned by drilling out the existing well's screen and riser pipe. The well was drilled out using 10.25-inch inside-diameter (ID) hollow stem augers (HSA). The old six-inch ID well was completely removed from the hole. The first

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replacement well was installed through the 10.25-inch HSA and construction details are discussed in Section 2.3.

2.3 Recovery Well Installation

Two new recovery wells were drilled and installed along the southern side of the site and are designated RW-6 and RW-7. A replacement recovery well was installed at RW-1 and maintains that designation. Well locations are shown on Plate 2.

The same procedure was followed in drilling and installing RW-6 and RW-7. A pilot hole was drilled using 3.25-inch ID HSA, and soil samples were obtained continuously with a two-footlong split spoon sampler. Samples were collected for the purpose of logging the borings and identifying boring termination depth based upon geology and occurrence of groundwater. Boring logs are presented in Appendix A.

The RW-6 pilot hole was drilled on February 6, 1996. The stratigraphy consisted of medium stiff to stiff silty clay and clay in the upper 30 feet. Below 30 feet, soil consisted of clayey silt with varying amounts of fine-grained sand. Locally, thin beds of fine-grained sand occur, separated by thicker sequences of silty clay. Groundwater was measured at 31.8 feet bgs, after drilling. The boring was terminated 42 feet in stiff, silty clay.

The boring for recovery well RW-6 was drilled on February 7, 1996, at the location of the pilot hole, using 10.25-inch ID HSA. The well was constructed using six-inch ID PVC riser and screen. The well screen was 30-feet long consisting of 0.010-inch continuous slot (wire-wrapped) openings. Construction details are provided in Appendices B and C.

RW-7 pilot hole was drilled on February 7 and 8, 1996. The stratigraphy consisted of mainly medium stiff to stiff silty clay and clay in the upper 30 feet. Below 30 feet, soil consisted of clayey silt with varying amounts of fine-grained sand. Groundwater was observed during drilling at about 31 feet bgs. The boring was terminated 47 feet in stiff, silty clay.

The boring for recovery well RW-7 was drilled at the location of the pilot hole using 10.25-inch ID HSA. The well was constructed using six-inch ID PVC riser and screen. The well screen was 35-feet long consisting of 0.010-inch continuous slot (wire-wrapped) openings.

The boring for recovery well RW-1 was drilled using 10.25-inch ID HSA to remove the old well and install the replacement well. The well was constructed using six-inch ID PVC riser and screen. The well screen was 40-feet long, consisting of 0.010-inch continuous slot (wire-wrapped) openings. This well did not meet production requirements and was abandoned in accordance with a variance (#546) obtained from MDNR Wellhead Protection. The replacement well for this location was offset approximately eight feet to the north. The boring

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was drilled using 6.25-inch ID HSA to a depth of 50.5 feet. The augers were removed from the borehole prior to installation of the well materials, with the borehole stabilized during well installation by water augmented with G-150. This approach was approved by EPA and MDNR. The replacement well was completed on September 12, 1996.

The three new wells have a 48-inch diameter carbon-steel well vaults with cover plate for well protection. The concrete vault for the original RW-1 was backfilled with soil.

2.5 Well Development

Well development was performed on each of the three recovery wells prior to installation of the pumps, discharge lines, and pump-control/power units. Development included surging each well for a minimum half hour, followed by pumping water and fine-grained material using an air-lift pump. Groundwater parameters of temperature, pH, and conductivity were monitored during development. Well development details are presented in Appendix E.

2.5 Expansion of the Groundwater Recovery System

The system recovery lines originally terminated at RW-5. The ground on the east side of the RW-5 control panel was hand excavated to determine the means for connecting RW-6 and RW-7 into the existing system. The recovery lines from RW-5 were found to have a "T" fitting with the north end leading back toward RW-4 and the air stripper, and the south end capped The expansion to RW-6 and 7 was connected to the south end of the "T". A ball valve was installed on the upflow side of RW-5 to aid in system installation and provide a means to isolate the new wells during construction so that the existing system could remain operating until the new wells could be brought online. The layout of the system expansion is shown in Plate 3.

A three-foot-deep trench, for placement of the discharge line and electrical cables, was dug using a ditch-witch. The trench trended southeasterly toward the southern fenceline, then turned east across the compacted-gravel driveway, running roughly parallel to the north side of the fence. Sand was placed at the base of the trench prior to placement of the two-inch ID PVC discharge lines. A minimum three inches of sand was placed between the PVC lines and the overlying electrical lines. The electrical lines were then overlain with a minimum six inches of sand before placing backfill and compacting.

The PVC pipe, in ten-foot lengths, was solvent welded with high-pressure PVC couplers. The sections of discharge line and the electrical lines crossing beneath the driveway were placed in a steel pipe to protect them from truck traffic. The steel pipe was covered with 3/4-inch minus rock to within 1.2 feet of the surface for additional strength. On the west side of the driveway, the trench (and discharge line and electrical cables) crosses a four-inch diameter

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natural gas line, which is at a depth of four feet below ground surface. The lines were pressure tested prior to placing and compacting backfill in the trench. No leakage was observed.

The recovery lines were then installed in the well vaults at RW-6 and RW-7. Recovery lines were connected to the discharge lines from the well pumps. At each location, a sample port, flow meter, one-way valve, and ball valve were installed. The 1/2 horsepower motor-driven pumps are controlled by a timer and electrical load sensors. In the case of RW-1, the original pump controller with water-level floats were used. Typical well recovery system details are shown in Plate 4.

2.7 System Operation

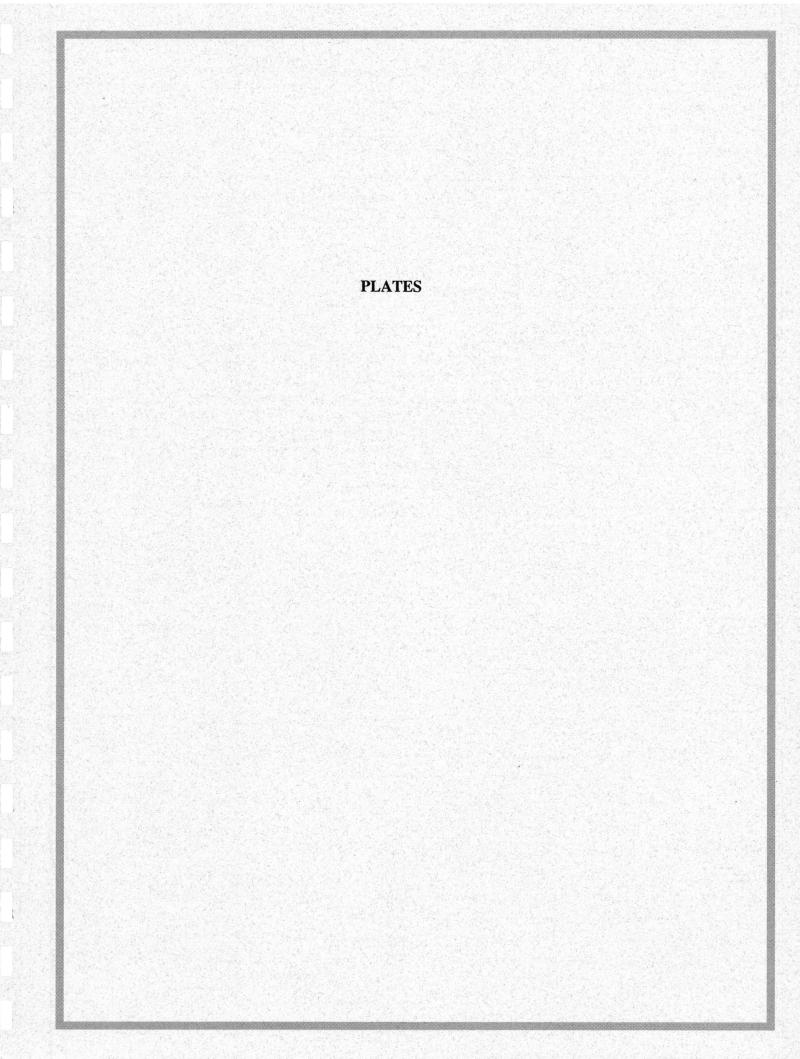
The new recovery wells on the south side were brought online on February 19, 1996. Pumping rates of approximately 15 gallons per minute (gpm) each at RW-6 and RW-7 were observed. Groundwater recharge along the southern side is slow, such that the wells were rapidly evacuated and began cycling on a timer-set, one-hour interval. The timer will be adjusted for longer or shorter intervals depending on seasonal conditions. RW-1 pumped groundwater at rate of approximately 9 gpm and cycles upon evacuation. Cycling time of the pump vary as the groundwater level fluctuates seasonally.

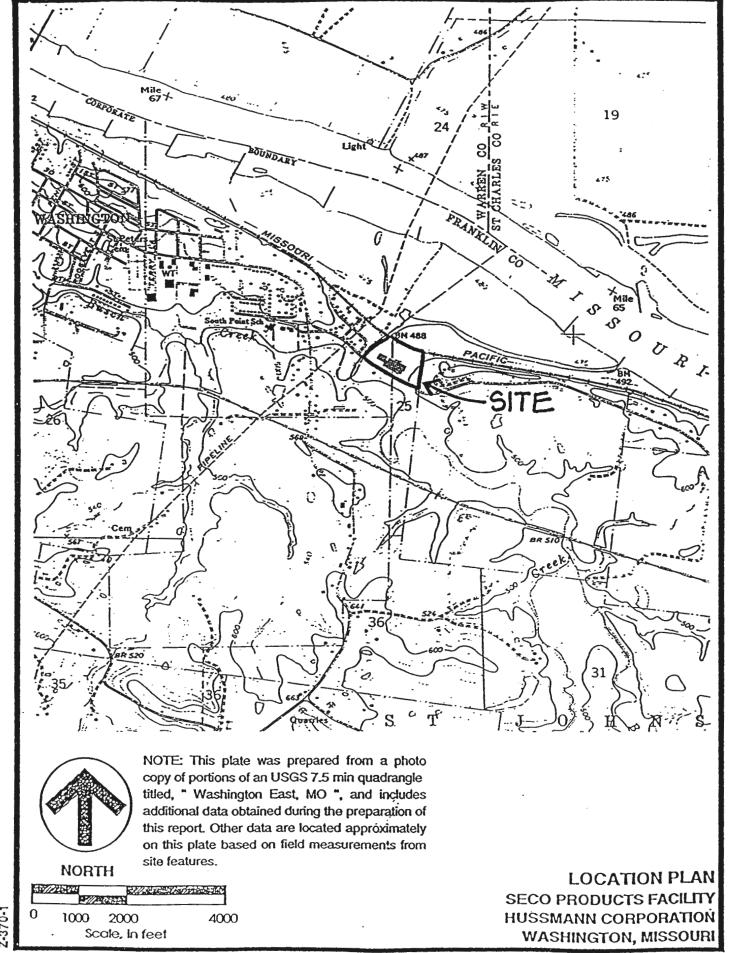
3.0 OTHER SITE ACTIVITIES

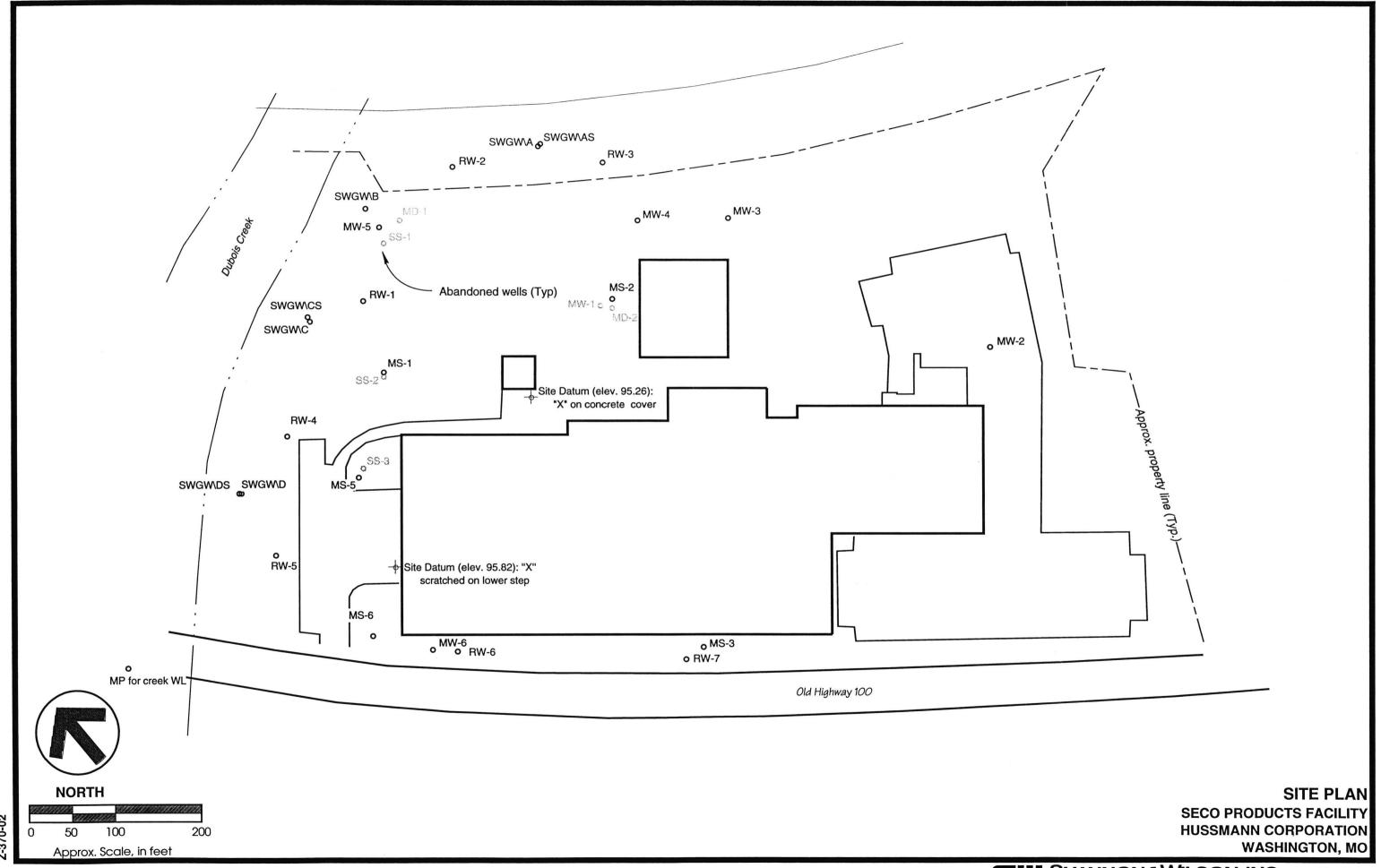
3.1 Waste Disposal

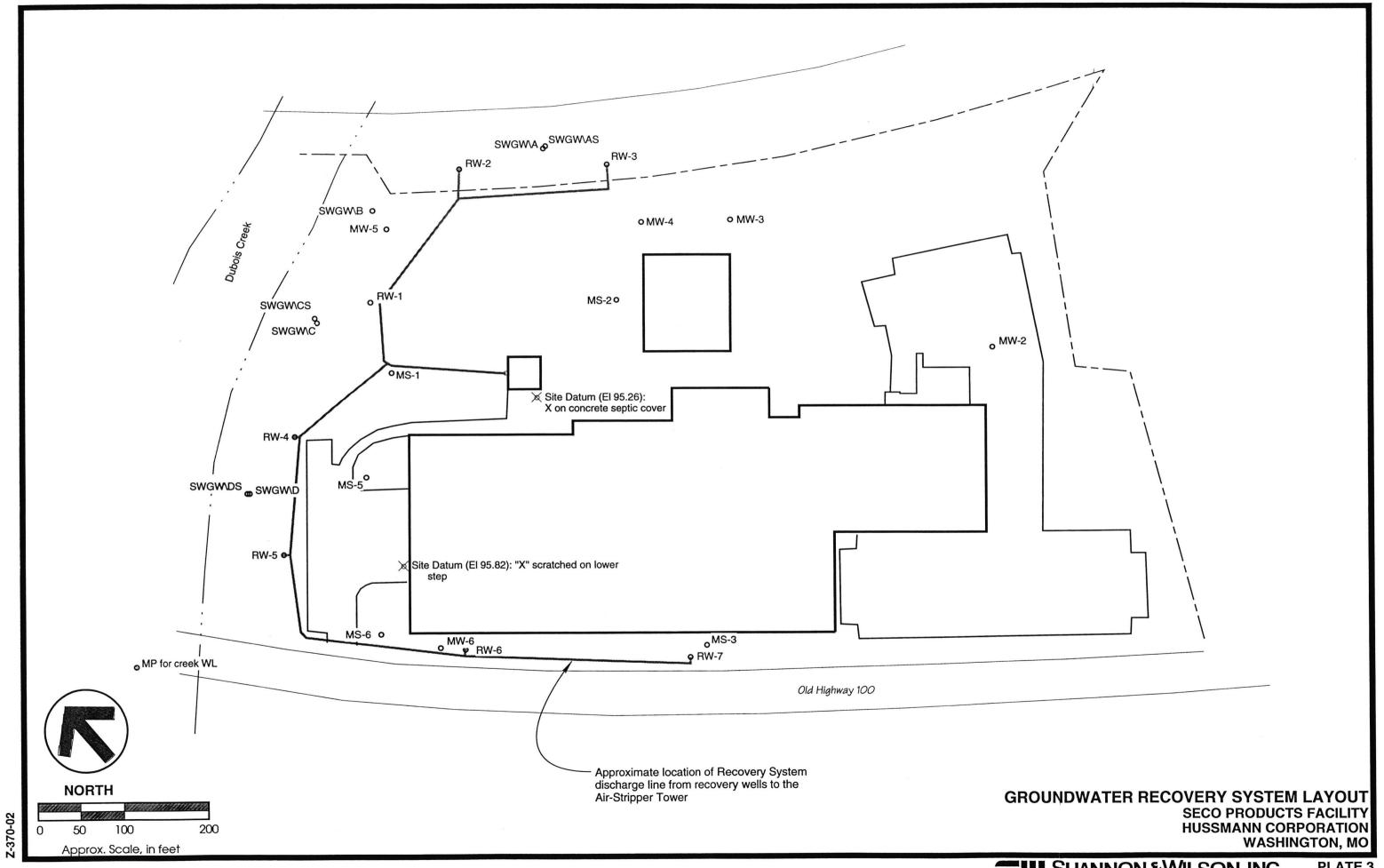
Analytical results of the soil cuttings (received in March 1996) were used to complete the permit application for waste disposal. The soil cuttings, contained in 19 55-gallon drums, were transported from the site on May 30, 1996. Manifests are presented in Appendix F.

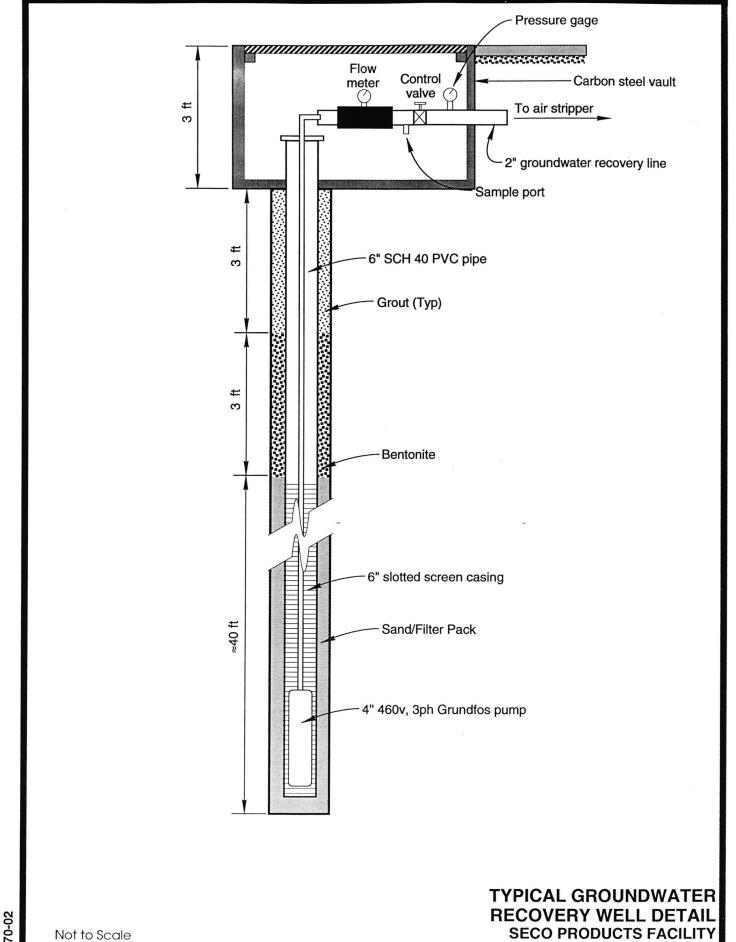
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WASHINGTON, MISSOURI

APPENDIX A

Boring Logs

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SHANNON & WILSON, INC. GEOTECHNICAL CO. PULTANTS

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SHANNON & WILSON, INC. GEOTECHNICAL COMPULTANTS LOG OF BORING BORING NO. RUD-(- (RUDT)

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PROJECT	<i>-</i>							JOB NO.		SHEET	OF
CLIENT	FACIL	177			IDBILL	ING AGENC	· · · · · · · · · · · · · · · · · · ·	2-370)-01	5	6
	74~~										
SIZE AND T	TYPE OF BIT				LOCA	TION (COOF	DINATES	ALC. OR STATION)		
-											
DIRECTION	AND INCLIN	IATION OF H	OLE		SOIL SAMP FOOT			CORING FOOTAGE		TOTAL DEPTH	
ELEVATION	ł			MFR. DESIGNATION OF DRILL CME 750	NUME	ER OF SOIL	SAMPLES	5	TUBES		
DEPTH TO	WATER			NO. OF CORE BOXES		STARTED		COMPLETE		5) // 01)
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SHANNON & WILSON, INC. GEOTECHNICAL CONSULTANTS

LOG OF BORING BORING NO.

500:505				:							RW-6 (PIL	-07)
PROJECT	GAA	154							JOB NO.		SHEET O	
CLIENT	FACIL	' ' 7					G AGENCY		7-37			6
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ELEVATION	•			MFR. DESIGNATION OF DRILL CME 750	NI PE	JMBEF ENETR	R OF SOIL ATION	SAMPLES	3	TUBES		
DEPTH TO	WATER			NO. OF CORE BOXES			ARTED		COMPLETED			
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DEPTH IN FEET	LITHOLOGY	LOG		ASSIFICATION OF MATERIALS (DESCRI			NUMBER		BOX NUMBER		REMARKS	
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SHANNON & WILSON, INC. GEOTECHNICAL CO' PULTANTS LOG OF BORING BORING NO. RW-7Cpilot hole)

PROJECT	· · · · · · · · · · · · · · · · · · ·				JOB NO.	SHEET OF
SFCO Facilit	- Hussmann	1			2-370-01	SHEET OF
Hussmann_			ILLING AGENCY			
SIZE AND TYPE OF BIT		LO	CATION (COOR	DINATES (eosciences Or Station)	
3/4" hollows	tem	Sc	NII.			
Vertical ELEVATION	IOLE	SA	MPLING OTAGE	117'	CORING FOOTAGE	TOTAL DEPTH 47
ELEVATION	MFR. DESIGNATION OF	DRILL	IMBER OF SOIL	SAMPLES	377	
DEPTH TO WATER	NO. OF CORE BOXES) DA	TE STARTED		COMPLETED INSPEC	TOR(S)
~31' @ 67.45 m 2/8			17/96	2	. /	SILCR
DEPTH IN FEET LITHOLOGY GRAPHIC LOG	CLASSIFICATION OF MATE	ERIALS (DESCRIPTION)		% REC % REQD	BOX NUMBER	REMARKS
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SHANNON & WILSON, INC. GEOTECHNICAL COMPULTANTS

LOG OF BORING BORING NO. RW-7(pilothde)

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PROJECT	C	F	1.1						JOB NO.	0-01	SHEET	OF /
CLIENT	Seco		/		1	DRILLING	G AGENCY	,	7.57	J - U (6
1	4055m	ann				Ur	ite	£ 6	coscio	=1165		
	TYPE OF BIT	!			1	LOCATIO	N (COOR	DINATES	OR STATION	1)		
DIRECTION	N AND INCLIN	NATION OF H	OLE			SOIL			CORING		707.	
1	EXTICA					SAMPLII FOOTAG	IG 4	7	FOOTAGE		TOTAL DEPTH 4	7
ELEVATION				MFR. DESIGNATION OF DRILL		NUMBER	OF SOIL	SAMPLES	3 0 3			
DEPTH TO	WATER			CME 750 NO. OF CORE BOXES		DATE ST		DATE	23 COMPLETE	TUBES D INSPECTO	DP(S)	
DEFIN 10	WAICH			NO. OF CORE BOXES		2/7/			2/8/96		ILCR	
DEPTH		GRAPHIC	01.4	CONTROL OF MATERIAL OF A	CODIDTIO		SAMPLE	% REC	вох	17,500		
IN FEET	LITHOLOGY	LOG	CLA	SSIFICATION OF MATERIALS (DE	SCHIPTIO	iN)		% REQD	NUMBER		REMARKS	
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LOG OF BORING BORING NO. Rw-7(p, lot hole) GEOTECHNICAL CO" SULTANTS Seco Facilibx 2-370-01 DRILLING AGENCY CLIENT United Geosciences Hussmann SIZE AND TYPE OF BIT

3'4' HSA

DIRECTION AND INCLINATION OF HOLE SOIL SAMPLING TOTAL 17' CORING FOOTAGE VEKTIC AL FOOTAGE ELEVATION MFR. DESIGNATION OF DRILL NUMBER OF SOIL SAMPLES PENETRATION 23 TUBES CME 750 DEPTH TO WATER NO. OF CORE BOXES DATE STARTED DATE COMPLETED INSPECTOR(S) 2/7/98 2/8/96 RWS/LCR SAMPLE. % REC BOX NUMBER DEPTH **GRAPHIC** OR RUN NUMBER LITHOLOGY REMARKS CLASSIFICATION OF MATERIALS (DESCRIPTION) IN FEET LOG % REQD brounds raymethed silly 55-8 240 16 CLa/ Lu Felminstains TAPK 17 soft moist, brown tsray mottled clayers it to silt w Femn stains, h 8 pg M brace fine sand 18 559 Sppr 19 5ppm 20 55-16 SIPM 21 mottled SILT u Fe/Ma ppm stainst trace fine sand 22 55-11 Eppn Stood, brown tsray mottled, silby Claylu Folminstainst trace limeston of frogments Oppor soto, mopst, gray silty clay

SHANNON & WILSON, INC.

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SHANNON & WILSON, INC.

LOG OF BORING BORING NO. Rw-7 (pilot hole)

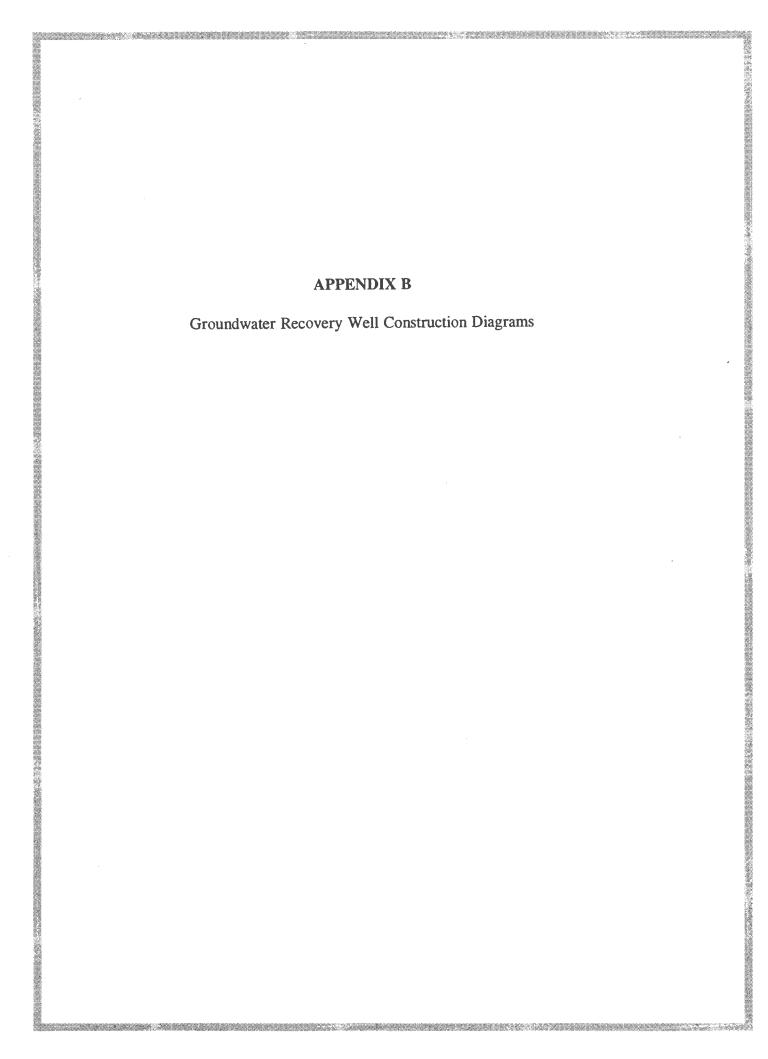
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PROJECT		т . 1	,	1				JOB NO.		SHEET OF
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SIZE AND 1	TYPE OF BIT	7 01 77 11		· · · · · · · · · · · · · · · · · · ·	LOCATIO	ON (COOR	DINATES	OR STATIO	iences	
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ELEVATION	KTICAL			MFR. DESIGNATION OF DRILL	FOOTAC	R OF SOIL	SAMPLES			191
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DEPTH TO	WATER			NO. OF CORE BOXES		TARTED		COMPLET	_ ' ' '	
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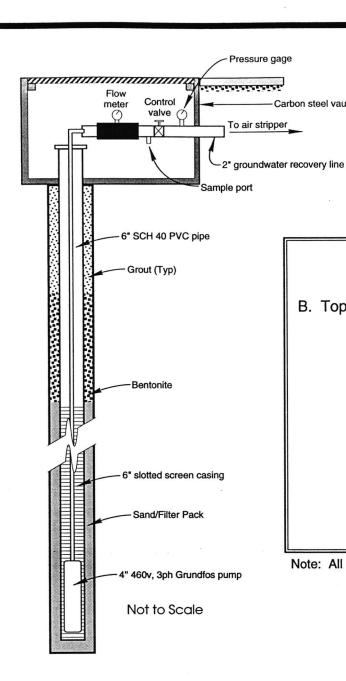
SHANNON & WILSON, INC. GEOTECHNICAL CO' ULTANTS

LOG OF BORING BORING NO. RW-7Collet b

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PROJECT	^	ົກ	,	1 .						JOB NO.	- 1	SHEET	OF
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DIRECTION	AND INCLIN	IOW ST	OLE				SOIL			CORING		TOTAL	
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ELEVATION	1			MFR. DESIGNATION	ON OF DRILL				SAMPLES				
				CME 750	5		PENETRA			23	TUBES		
DEPTH TO				NO. OF CORE BO	XES		DATE ST			COMPLET		`, '	
~31' P	0745	2/8/40	\$				2/7			18/96	RWS	LLCR	
DEPTH IN FEET	LITHOLOGY	GRAPHIC LOG		SSIFICATION OF				OR RUN NUMBER	% REC % REQD	BOX NUMBER		REMARKS	
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	HANNO EOTECHN	ON 8	WILSO C''CULTAN	N, INC					LOG BORI	OF BOI	RING · RW-7Cp	797 J.
ROJECT			ξ ;					\	JOB NO.		SHEET	OF 0
Seco	Fac	ilit	Y			DRILLING	AGENCY	,	3-37	70-01	76	6
LIVE		/							2005	cience		
E AND TYPE OF						LOCATIO	N (COOR	DINATES	OR STATIO	cience	<i></i>	
3/4	hollow	5ter	<u>n</u>			SOIL						
VELTICAL	LINATION OF F	TOLE			- 1	SAMPLIN FOOTAG	IG 4	7'	CORING FOOTAGE		TOTAL DEPTH	Count.
VATION			MFR. DESIGNATIO			NUMBER	OF SOIL	SAMPLES				Juny
PTH TO WATER			NO. OF CORE BO	50		PENETRA DATE ST		DATE	23 COMPLET	TUBES C		
FIN 10 WAILK			NO. OF CORE BO	ALG		2/7			8196		/ LCR	
EPTH LITHOLO	GRAPHIC	CLA	SCIEICATION OF	MATERIAL S (F	DESCRIPTIO	M)	SAMPLE OR RUN		вох			
FEET LINOU	LOG		SSIFICATION OF				NUMBER	% REQD	NUMBER		REMARKS	
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A. Top of 6" riser- 1.5'

B. Top of cement/bentonite grout- n/a

C. Top of bentonite seal- 3.0'

D. Top of sandpack- 6.0'

E. Top of screen- 9.0'

F. Bottom of screen- 48.5'

G. Bottom of boring- 50.5'

Note: All depths measured from ground surface.

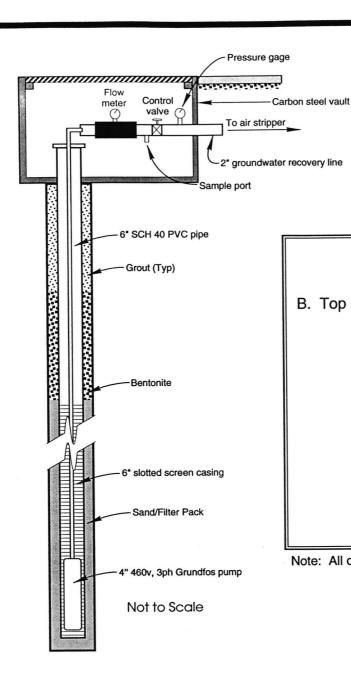
Job No.: Z-370-02	Well No.:	RW-1	Date Installed:_	9/10/96
Installation Observed B	sy:	.C Rosen	Subcontractor:	United Geosciences
			7	8
Well Components:				

Carbon steel vault

Well Components:
Screen 6" ID PVC, 0.010 inch wire-wrapped, flush threaded
Riser Pipe 6" ID PVC, flush threaded
Backfill Cement bentonite
Bentonite Seal_Chips
SandpackMorey Filtration Media GA-9
Protective Casing Carbon Steel Vault, 48-inch dia. with cover

GROUNDWATER RECOVERY WELL CONSTRUCTION DIAGRAM





A. Top of 6" riser- 1.6'

B. Top of cement/bentonite grout- n/a

C. Top of bentonite seal- 3.0'

D. Top of sandpack- 8.0'

E. Top of screen- 11.5'

F. Bottom of screen- 41.5'

G. Bottom of boring- 42.0'

Note: All depths measured from ground surface.

Job No.: Z-370-02	Well No.: RW-6	Date Installed:	2/7/96				
Installation Observed B	y: LC Rosen	Subcontractor:	United Geosciences				
Well Components:							
Screen 6" ID PVC, 0.010	inch wire-wrapped, flush thre	eaded					
Riser Pipe 6" ID PVC, flush threaded							
Backfill Cement bentonite							

Backfill Cement bentonite

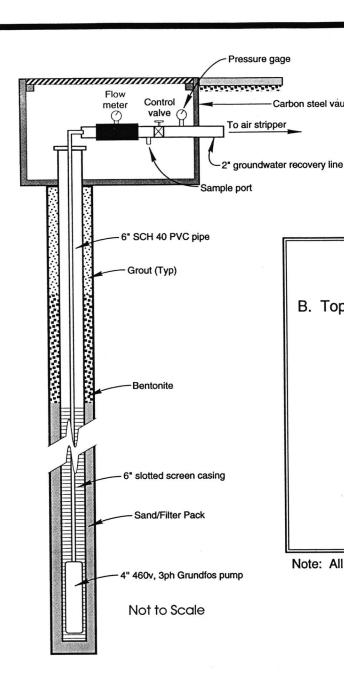
Bentonite Seal Chips

Sandpack Morey Filtration Media GA-9

Protective Casing Carbon Steel Vault, 48-inch dia. with cover

GROUNDWATER RECOVERY WELL CONSTRUCTION DIAGRAM





A. Top of 6" riser- 2.0'

B. Top of cement/bentonite grout- 3.0'

C. Top of bentonite seal- 4.0'

D. Top of sandpack- 7.0'

E. Top of screen- 11.5'

F. Bottom of screen- 46.5'

G. Bottom of boring- 47.0'

Note: All depths measured from ground surface.

Job No.: Z-370-02	Well No.:	RW-7	Date Installed:	2/8/96
Installation Observed E	By:	LC Rosen	Subcontractor:	United Geosciences
Well Components:				

Carbon steel vault

Screen 6" ID PVC, 0.010 inch wire-wrapped, flush threaded 6" ID PVC, flush threaded Riser Pipe Cement bentonite Backfill Bentonite Seal Chips Morey Filtration Media GA-9 Sandpack_ Carbon Steel Vault, 48-inch dia. with cover Protective Casing_

> **GROUNDWATER RECOVERY** WELL CONSTRUCTION DIAGRAM



APPENDIX C Groundwater Recovery Well Documentation

MONITORING WELL DOCUMENTATION FORM

Well No. RW-1 Job Name SEC	00
Job Number <u>Z-370-02</u> Date Complete	d 9/12/96 Supervised By LCR
A. Surveyed Locations and Elevations	Well Installation, continued
Locations (±0.5 ft.)	Filter pack:
Specify corner of site See site plan	Material Sand (Morie Co. Filtration Media)
Distance and direction along	Grain size GA-9 (10-20)
boundary	Volume 33 50 lb bags (~17 cu ft)
Distance and direction from boundary	Seal (minimum 3 ft. above filter pack):
to well	Material Bentonite chips
Elevation (±0.01 ft. MSL)	Placement method gravity
Ground surface _~83	Volume <u>~2.5 cu ft</u>
Top of protective casing _~83.3	Backfill (if different from seal):
Top of well casing _~82.0	Material <u>NA</u>
Benchmark elevation 95.82	Placement method
Benchmark description <u>Steps, Receiving</u>	Volume
	Surface seal design:
B. Soil Boring Information	Material of protective casing <u>Carbon Stee</u>
Name and address of construction company	Material of grout between protective casing
United Geoscience, Inc.	and well casing NA
Villa Ridge, MO	Protective cap <u>Vault Cover</u>
Name of Driller Rob Vogt	Material <u>Carbon Steel</u>
Drilling method <u>6.25" Hollow Stem Augers</u>	Vented? Y / N Locking> Y / N
Drilling fluid NA	Well cap <u>Yes</u>
Bore hole diameter <u>~11 inches</u>	Material <u>Steel w/ rubber gasket</u>
Soil sampling method <u>NA</u>	Vented? Y / N Locking> Y / N
Depth of boring <u>50.5 feet</u>	
	D. Ground Water Measurement
C. Monitoring Well Installation	Water level (±0.01 ft. below top of inner well
Casing material PVC	casing) _~19 feet after development
Length of casing _7.5	Stabilization time NA
Inside casing diameter <u>6 inches nominal</u>	Well development method <u>Air lift with surge</u>
Casing joint type Flush threaded	block, followed by downhole pump
Casing/screen joint type Flush threaded	
Screen material PVC wire-wrapped	Upgradient or downgradient well
Screen opening size <u>0.010 inch</u>	NA
Screen length 40 ft	
Depth of well 49 feet below ground surface	



MONITORING WELL DOCUMENTATION FORM

Well No. RW-6 Job Name SE	CO				
Job Number <u>Z-370-02</u> Date Complete	ed <u>2/8/96</u> Supervised By <u>LCR</u>				
A. Surveyed Locations and Elevations	Well Installation, continued				
Locations (±0.5 ft.)	Filter pack:				
Specify corner of site See site plan	Material Sand (Morie Co. Filtration Media)				
Distance and direction along	Grain size <u>GA-9</u>				
boundary	Volume 60 50 lb bags (~30 cu ft)				
Distance and direction from boundary	Seal (minimum 3 ft. above filter pack):				
to well	Material Bentonite chips				
Elevation (±0.01 ft. MSL)	Placement method gravity				
Ground surface 97.87	Volume _~2.5 cu ft				
Top of protective casing <u>~97.95</u>	Backfill (if different from seal):				
Top of well casing _96.22	Material NA				
Benchmark elevation 95.82	Placement method				
Benchmark description Steps, Receiving	Volume _~				
	Surface seal design:				
B. Soil Boring Information	Material of protective casing <u>Carbon Stee</u>				
Name and address of construction company	Material of grout between protective casing				
United Geoscience, Inc.	and well casing <u>NA</u>				
Villa Ridge, MO	Protective cap Vault Cover				
Name of Driller Rob Vogt	Material Steel				
Drilling method 10.25" Hollow Stem Augers	Vented? Y / N Locking> Y / N				
Drilling fluid NA	Well cap Yes				
Bore hole diameter _~14.5 inches	Material Steel w/ rubber gasket				
Soil sampling method <u>Continuous split spoon</u>	Vented? Y / N Locking> Y / N				
Depth of boring <u>42 feet</u>					
	D. Ground Water Measurement				
C. Monitoring Well Installation	Water level (±0.01 ft. below top of inner well				
Casing material PVC	casing) _26.00 after development				
Length of casing _10.35	Stabilization time NA				
Inside casing diameter 6 inches nominal	Well development method Air lift with surge				
Casing joint type Flush threaded	block, followed by downhole pump				
Casing/screen joint type Flush threaded					
Screen material PVC wire-wrapped	Upgradient or downgradient well				
Screen opening size <u>0.010 inch</u>	NA				
Screen length 30 ft					
Depth of well 42 feet below ground surface					



MONITORING WELL DOCUMENTATION FORM

Well No. RW-7 Job Name SEC	00				
Job Number <u>Z-370-02</u> Date Complete	d <u>2/8/97</u> Supervised By <u>LCR</u>				
	M-II I - A-II - Air				
A. Surveyed Locations and Elevations	Well Installation, continued				
Locations (±0.5 ft.)	Filter pack:				
Specify corner of site See site plan	Material <u>Sand (Morie Co. Filtration Media)</u> Grain size <u>GA-9</u>				
Distance and direction along	Volume _58 50 lb bags (~29 cu ft)				
boundary					
Distance and direction from boundary	Seal (minimum 3 ft. above filter pack):				
to well	Material <u>Bentonite chips</u> Placement method <u>gravity</u>				
Elevation (±0.01 ft. MSL)					
Ground surface 98.05	Volume _~2.5 cu ft Backfill (if different from seal):				
Top of protective casing <u>~98.15</u>	Material <u>Cement - bentonite grout</u>				
Top of well casing 96.20	Placement method gravity				
Benchmark description Staps Receiving	Volume _~2.5 cu ft				
Benchmark description <u>Steps, Receiving</u>	Surface seal design:				
B. Soil Boring Information	Material of protective casing <u>Carbon Stee</u>				
Name and address of construction company	Material of grout between protective casing				
United Geoscience, Inc.	and well casing NA				
Villa Ridge, MO	Protective cap Vault Cover				
Name of Driller Rob Vogt	Material <u>Carbon Steel</u>				
Drilling method 10.25" Hollow Stem Augers	Vented? Y / N Locking> Y / N				
Drilling fluid NA	Well cap Yes				
Bore hole diameter _~14.5 inches	Material <u>Steel w/ rubber gasket</u>				
Soil sampling method Continuous split spoon	Vented? Y / N Locking> Y / N				
Depth of boring 47 feet	•				
	D. Ground Water Measurement				
C. Monitoring Well Installation	Water level (±0.01 ft. below top of inner well				
Casing material PVC	casing) _28.50 after development				
Length of casing 10.35	Stabilization time NA				
Inside casing diameter <u>6 inches nominal</u>	Well development method Air lift with surge				
Casing joint type Flush threaded	block, followed by downhole pump				
Casing/screen joint type Flush threaded					
Screen material PVC wire-wrapped	Upgradient or downgradient well				
Screen opening size _0.010 inch	NA				
Screen length 35 ft					
Donth of well 47 feet below ground surface					



APPENDIX D

Well Development Forms

MONITORING WELL DEVELOPMENT DATA

Well No. RW-1 Job N	Name <u>Ηι</u>	<u>ıssmann (S</u>	Seco Prod	<u>ucts Facili</u>	ty)		
Job Number <u>Z-370-01</u> Date	Develope	ed <u>9/10-12</u>	/ <u>96</u> Deve	eloped By	Un. Geos	<u>science</u>	
	V						
1 Date of Installation 0/10/06							
Date of Installation 9/10/96 Statis Water Levels - Refere Deve		10					
Static Water Level: Before Dev	•						
After Development <u>~18</u> Ft. B. Quantity of Water Loss During Drilling, If Used <u>NA</u>							
•						Gal.	
4. Quantity of Standing Water in We	ī	 				<u>Gal.</u>	
5.	Start		Du	ring T	Τ	End	
Volume (Gal.)	0					90	
Specific Conductance (μmhos/c)							
Temperature (C)			3				
pH (s.u.)							
6. Depth from Top of Well Casing to	Rottom of	FWall I	NΔ			Ft.	
8. Depth to Top of Sediment: Bet						<u>Ft.</u>	
		pment N			-:- Ft.		
Physical Character of Water Sli						ii ii	
	g ,						
10. Type and Size of Well Developm	nent Equip	ment Use	d <u>Surge b</u>	lock, air l	ift, downh	ole	
grundfos pump		E				in annual control of the second	
11. Description of Surge Technique,	if Used S	urge block	c; used dr	II rig to ai	d in surgir	<u>ng</u>	
12. Height of Well Casing Above Gro	ound Surfa	ace <u>~ -1.</u>	5			Ft.	
13. Quantity of Water Removed	13. Quantity of Water Removed 90						
13. Quantity of Water Removed 90 G 14. 1-Pint Water Sample Collected NA (time							
*Development Conditions: (1) Well Water is Reasonably (2) Sediment Thickness ≤5°		en Length					
15. QA/QC: Development Performe	d by <u>LCR</u>		v 200275000000000000000000000000000000000			150	
Site Manager							

MONITORING WELL DEVELOPMENT DATA

Well No. RW-6	Job Name <u>H</u>	ussmann (Seco Prod	<u>ucts Facilit</u>	t y)	
Job Number <u>Z-370-01</u>	Date Develop	ed <u>2/15/96</u>	Develop	ed By <u>Un.</u>	. Geosciei	nce
1. Date of Installation <u>2/7/96</u>						
2. Static Water Level: Before	Development	28.5	<u>Ft.</u>			
	evelopment _					
3. Quantity of Water Loss Durin						Gal.
4. Quantity of Standing Water	in Well Before	Developn	nent <u>~25</u>			Gal.
5.	Start		Du	ring		End
Volume (Gal.)	0					100
Specific Conductance (µmhos/	(c)					
Temperature (C)						
pH (s.u.)						
 Depth from Top of Well Casin Screen Length 30 Depth to Top of Sediment: Physical Character of Water Type and Size of Well Deve 	Before Develo	elopment <u>4</u> pment color; silt w	14.5 45 vith trace t	F o no fine s	Ft. Ft. sand	Ft. Ft.
11. Description of Surge Techni12. Height of Well Casing Above				ll rig to aid	d in surgin	rg
13. Quantity of Water Removed _			-			Gal.
14. 1-Pint Water Sample Collecte						ime)
*Development Conditio (1) Well Water is Reason (2) Sediment Thickness	ns: nably Clear					
15. QA/QC: Development Perfo	rmed by LCR	/RWS				
Site Manager ACK		~~~				



MONITORING WELL DEVELOPMENT DATA

Well No. RW-7 Job	Name <u>Hı</u>	ussmann (Seco Prod	ucts Facil	ity)	
Job Number <u>Z-370-01</u> Date	Develope	ed <u>2/15/96</u>	<u>Develop</u>	ed By <u>Ur</u>	ı. Geoscie	nce
			*			
Date of Installation 2/8/96						
2. Static Water Level: Before Dev	elopment	27.5	Ft.			
After Devel	opment	26	Ft.			
Quantity of Water Loss During Drilling, If Used NA Gal						Gal.
4. Quantity of Standing Water in W	ell Before	Developn	nent <u>26</u>			Gal.
5.	Start		Du	ring		End
Volume (Gal.)	0					75
Specific Conductance (µmhos/c)						
Temperature (C)						
pH (s.u.)						
Depth from Top of Well Casing to	Pottom	F VA/OII	EO (not fin	-li		
, , , , , , , , , , , , , , , , , , , ,	BOLLOTT O		•	ai casing	<u>ievei)</u>	<u>Ft.</u>
8. Depth to Top of Sediment: Be					 =t.	Ft.
					 =t.	
After Development50Ft. 9. Physical Character of WaterTurbid_gray color; silt with trace to no fine sand						
10. Type and Size of Well Developm	ent Equip	ment Use	d <u>Surge</u> b	lock, air li	ft	
11. Description of Surge Technique,	if Used S	urge block	k; used dri	ll rig to aid	d in surgin	g
<u> </u>				***************************************		
12. Height of Well Casing Above Gro	und Surfa	ce <u>-2.0</u>			_	Ft.
13. Quantity of Water Removed						Gal.
14. 1-Pint Water Sample Collected	NA				(t	ime)
*Development Conditions: (1) Well Water is Reasonably (2) Sediment Thickness ≤59		en Length				
15. QA/QC: Development Perfor	med by <u>L</u>	CR/RWS				-
Site Manager ZCK						

APPENDIX E

Field Logs

42 02

thend the starter desingage. Fused had blown again. Did not have time to investigate cause any further. Will have to get jump/motor

1-12-96 RWS, RAG onside 10:00 set up Hermit @ RW-3, turn ont allow to pump,
RW-4 not frozen, pumping
B= 13pm, All 3 fuses in imm bad, replace + starty 1 fose. Res. to motor windings + to ground all appear to be try again, works for 2 1min, then starter tops & blow 2 fus es, pull motor, splice I float lead theplice couble 61 location disconnect leads from motor + best 6 box, meas. between 500 Kt 1.5MCl between motor

leads Cshould be ∞Ω).

Ros, appear to be ak.

from box to junc. box in

well pit, bad below this

point, plan on coming cit

next week to replace

motor leads offsite

3:30

THE WALL

1-16-96 peplace wiring in RW-2, replace value of plumbing bottom of flow meter froze to broken, use bottom from RW-5. pump working to pumping 6) = 12-165 pm. clean pumping RW-4. flow 6) tower to 205 pm off site 3.30

2/1/96 Weather 18°F Floren
LCR on site (10.30), ipreted Georgians
crew arrived to 10.45. Conducted site
Sefery masters. Discussed work flor.
Crew starts by fixing/setting up
decompad.

set up for fine closure, Used jacklands, to break concert oround MC. I proveder casine. Successfully pulled entire MW-1 well out of the ground. Grutel the hole to the surjece. Followed closure procedure - break botton, fill with grout jull, grout, full, grout. MW-1 meacual 25.5 from by of coming to bottom

13:15 Removed protective cover from MO 2.

Weed reg to help break consent and full

cover of b. Pipe/cosen, broke while

pulling - growted pipe in place per

warver, Meesured pipe/well o 90'.

Musued well agen of a Some on Kill; L;

pice backe of dury gull granted in

place. Placed ~ 30 julies in MO-2; which

1196

15:10 Morea over to 55-1, headers 17.5, comp, someon, w., the to fact intention out.

TOT 022 yest. Coming broke die way
pull-granded in glace

Legt Sit ~ D17:00

2/2/46 OF Wind - 10 mgt. Pily Sunny

0312 Cir much

down to RW-1 and bagin setting in work.

-0900 ATV motor /starter wouldn't with Constituted of rest of Street, or doubling pulling out pury - I motor

2/2/96 (2:1+ 20930 July started - I moved over the hole. Swivel perse frager used princes -1012 Began turning De 4" HSA and overduling - 1210 Lunch break, augers 6 -35' -12:40 Kenuned dulling -14:15 Terminated 259.5 655 -> 52.5 1) overdulling. Began pulling out ougers. Command screen fumerily in the last 18 of augus. The well was relescoped in itself, parkcularly evident in lead-flight ouger. Some Kithe Sip-wel ween was just a slotted in were wrogged ... perforated w/ 1/8" holes. May be reason well sanded up. 1/5:00 Started to dull down again a/ 10 4 augen i order Loset new/ replacement recovery ~ 16:00 Oc about 45-50, realize visible rado are separated. Pull 20' Set of rods out. can see toy of rodo down augers. Due to succe ad casing frozen/stack insule

2/2/96 cont

last remaining Wight, they are overdull to know dull rate, The te clean-up work area. Will semove materials from ouges in their Sing over the beekend and overdill in Monday

~1700 Syndat I depart inte

2/5/96 Weather Cloudy 150

-083D LCK n site

3898 um ten Gesseene crew accorded publims removing well from unger, beinn setting up / warnering of My. Care hours sna , who has radi.

0910 Began trying to snay the rocks, but ne success.

~ 2920 Tried to retrieve by evendules to nod died por some up (publis 20')

- 0745 Tried rod with look again al no success.

~ 1000 Started to overdell a gain to recove) Kex rods 10:00 Na further success. Crew lefe to get a better flooplight so try to use the book to recover her 1005 1112 Crew returns - pres again w/ better Munimotion not Sacresaful, Left Cite again to get a slip ring able to go over hex rode - 25' bis. ~ 12:15 Trying to get to step ging over her red. Snegard the kentod but couldn't pull it as slip ring catches inside the "12: 40 Crew beares do get the slip ving show hered so that it will fit while julling. +B20 Try b jet slip ring on rods. Got stip in on - during pull, the styring broker. - 13:50 Wan + to stop to fachier a new step min, ~15:10 Crew returns and true to recover they toits Stije veny having brouble betting on rock. 1-16:10 Left site - dull crew remained to my and remove rods which had been brought to "20" bys

216/96 Weather "201 Poly survey 0750 Lex mit. Crew acrosa & 5730 Cear informs Bosse that the free rock will sacceptuling recovered po 1500, gesidence Dulling down to ranget depthis HSA! presently (40' -1900. augus e'sz'; gulled her rode out and Set up to place well -0945 Steelt placeny screen and carry in wagers. 50.5 feet of toke well up -10:10 40 of \$ 10 slet Johnson whener 10 year of casing and 0.5 of sid case 10110 Start adding filter prek sand. Hele s Staying open co digth - probable smearing of clay and addition of unter the Keases iny. 1-12:10 First placing Letter Sand, Used 38 #100 bags. Bottom of well @ 50' 635 Sande ~ 7.5 45 (2" Love TOS). added Envergly bentinele chips medium to 5' From TOC (3') - weed 3 bags Superier water in hole he kindrate -12:20 Fast clean up around well site Esimile -500 gallons added to maintain head.

2/6/96 ~13:40 augus ate semored from RW-1 and brought to decen pad. Soil berrelo moved to upper level in vicinity of trailers and RW-4. Crew to solard beelen and get 314" NSA from Shap is dull pilot holes on south side for new secovery wells ~14:16 Las cuties is and a sangle pelot hole for RW- to located apprimately 30' East of MW-6. ~14:28 Trew arrives of 3 4 NSA . Get ready to go to RW-6 ~15:00 Set up on Rw-6 and began dielling ul 3 4 " HSA u/ continuous split spoots sampling. D) M meito ~16:00 aujers c ~ 30'. OSM dejants ~16:30 Borny congleted a let saugle from NO -42 bys. Crew breeks rod + sugers and deans up dull area

16:45 Finished clean-up-left site

2/1/96 Weather Overcot = 35° = 0000 LCA, Rus onete; dull crew onside. Schap for diell at 10/4° HSA a Rw-6.

11.10 drilling completed, begin installing c'well \u 30' of screen botton = ~420

> sand packthe Morie Co. Filtration Media, 5016 box, GA9

13.00 complete well placement 60 bags of sand to 8', 2 bags of bent on, be 60 3' Hydrated bentraite. Crew bearing cleaning mand RW-10. Start pregaring for RW-7

213:50 Obtained monthly tower sumpli for

14130 Moved rig to location for RW. 7.
14145 Stanted dulleng @RIU-7
16:20 Clutch on rig not working well Stop
dulling - last sangle from 32.34' Clears is
before learning.

"16.45 Degat 5.2.

10 2/8/86 Weath Ours 50° 007:45 · 15:10 Ready to place benemile seal. Well 0745 Like orate. Clear rund @ 0730 for fig. 2 buts of Enumphy Medium. Seel 3 4' bgs. added water to hydrote. 0300 Rej is one front often bleeding out refilling chital line Resurre delling Began cleanup of dill sites, hummed culting removed angero Worked. plumbing connections for time! Dist. 0850 Born terminated often colketing crew antinued deanup 1930 Set up to diel at 10 4 HSA 1645 Shurdown for theday - left site 20945 Start dulling w/ 10 4 100 @ 800-7 ~11:15 Cargers & 40' bys Evident that Julling 2/9/96 Weather Cloudy 30 is harder-duller in fighting the hold. ~0500 LCR RUS meste -0830 Crew maile, Let up for deren of sure-~12:15 Little grogers entings Inst coming and divelopment a fur-1 10:00 Begin fun block development a The 1300 Sugged dilling - bale patably of 6.50. Sex up to yble well true to enerticini; Cower 20 Screen -11.15 Sure open 20' of creen Triller of hile dejoh open had well place to The bottom who sand layer of 1. ndicates ~ 12 Foot of sediment is well bottom - 1340 well is place, begin selling felter juck "12:15 Completed surging. Let up to use send Birton of well expense to be 047. anligt to remove fines and water Used 35 of were wray screen 15:05 Sand brught to 35 bes - Driller was from well. - 1400 Setting airlift line in hale In RW-1 supposed to go to 9' - Then informs me That his reference point is TBC, not ground stirface / (/sec) 58 50 bags

2/9/56 cont 2/12/94 1430 Start purping of RW 1 using seiter through, ~10:00 Moved Ditchlistch to RW-7 and Regan trenching west toward gate 1475 No make increase in flow p town "" ~ 12:00 Trench - Completed efect for brunery. unimetion of wer to wow discharge. ~ 13:00 Used Backhoe of Ditch Witch to dig Extremely Suched gray will discharge ?! around dandoned well in promention 16.30 dis-assembled pump on RW-1, leave site to cut of pipe. ~1400 Sand delivered to ite. Crew lay out 2" PVC line - start connecting 10' sections 2/12/96 wenther Pry Cloudy - 250 000 of presure couglings to deate 20 0800 CCK in site. Schmitt : helper maile c -0815. oxerator of Dutch witch on sile - Hike ~15:00 Ready to cross driveway - need to Michalett Schnick advised that is would wait until 16:00 per SCO. Get metal be out tomorrow - net today to finish perje sleeves ready for PVC line and development and more sames electrical line Noted that weren ~0900 Set up to start treaching - hand duy @ symmed shut due to dung track dignice RW-5 to find tie in source Found that sand-will need to reozen. Rev- 5 pended in a to, so hook in will be ~16:00 Start trendering across driveway. ~ 16:30 Lay sleave For PVC - covered of "c-14" easier Hand due a location to cross the gas line Found steel line below 3' - will minu to ~ 1.2 from surface Laid sleave In cloemical line Back Celled cross the gas line of PUC recovery line just above The jos line. ~17:30 Sturdown-reged off encavation ~09.15 Trenching started from RW-5 Loward the ~17:45 Dejat site west receiving gate.

15

A Agricultural Company of the Compan

14	
3/13/96 235 Party Clande 0320	2010 Shat be carried RW-1 accomitted
0520 CCR, RWS mate	be them 2 47.50 Some TOC (250 bys)
330 UG mite-need to find point	surie in lo intervals
presure couplings of 2" hill valve.	surge in 10' intervals. 1' 210 19 Finish surge in hother 547. 1'
Located vendor-left to acquire gots	
at KW-5, Normed that mothered	10:50 begin air pumping,
of disch french just sint if markete	pH 8.1
That willaged overnight will need	temp 15.7
to reduce	Gond 1550,
10:00 remed that in sould not be brought	pimp 25 sal 2/minute
jo site - further regains needed	When no flow fithing on
~ 10:45 Pipe land to diversing UG leaves to	pump head (air pump) is
act rendal backhore	tately they will fix the turn
~12:15 Call from UG - buckline alwardy 12/1/2.	11.ai - 1-un te repair pomp
No gentler work posse la	12:20 Street sumpine pump = 30 sallin
~12170 Left ste	12:30 Start pumping pumping 30 salling sand. well is rectasing
	slow so they start to singe
=/14/46 ~30° Claudy @ 0200	well again \$ 12.55
0700 e. P. Rus ansito	14.30 248' to top of essing after
0530 UG across of rig - sets up to complete	Surging 19 per losection
development a RW-1. Set up Hermert dasta legger a RW-5 to determence	14.40 350,001 pH 8,1
cyclin pechare rate in roles to	temp 14.8
Walnute whether change the loats	cend 14.3
is necessary	15:00 290 sal pl 8.2 tem 14.7 cund
	, 3 (

\$17:00 RW-1 installed + pumping. = 10 spm. Cycles off For a min, then pumpo = 4gal offsite 17:10 Note: UG finished laying The water line e - 4:00. Decided not to turn line or to test to avoid freezen overnight since the lines would not be buckfilled. also to allow additional time for the joints/ glue to 2/15/96 Claudy -300 0815 CCR RWS noite, uf turned valve & test new line c ~ 07:20. 0530 Visually inspected the glue wints. No lookage observed at that time you Schmitt-left no other creen available Went to check RW-1. Observed puray capting of minutes of thes & 3.5 cale. No observable drawdken in gizmeter to the west

- 10:30 UG onside, get ready to develop Range RAG answes to do manderares of the A RW-3.
- ~11:00 Surge of RW-7 Legins. Water @ 27,5 From
- -12:00 Surging of Kw-7 through full lingth completed - water level p 26 from TOC. Coppositionally 4-6" of sediment i well Set up to pump well ria acrilet
- n 1300 Removed a propinately 75 gerllors, itse.
 in turbied may uf sitt; to to no sand (Hg)

 Drumse Lw-6 still blocking acress to
 development continue pumping of Lw?
 until Lw-6 is available.
- 501 samples from burels from well dielling.
- 1500 More fig to RW-10
- 15:30 Start surging RW-6, With level @ 28.5'; soft Setterno 44.5' From TOC
- From Rw-7. Wall , 26' below TOC.
- 16:40 Constinctely 60 gallons removed. Steps to check recovery, white level & 37.5' below TOC

1/5/90 Cheled water level - @ ~ 36.5' Fring For .

indicating well is recovering . Started'

pumping more while setting up to

pump into the system . Snowing

~17:00 snowing heavily . Sheet down . Reproperl'

~100 galo .

~17:10 Cepint site

2/16/96 Warthe Mory Sunny -20"0 300

0315 ICR RWT Unsite

to pout / pull present in Finent grout
of cover wells abandoned on 2/1/96
0900 Celled Cokelling to find out why their
people werent on-site for cleaning the
town. Doug a Eckel hamp said their
peras workhildsome out because it was
too odd'

8930 Rig (acker) deve head i main winch line not working . Ser vant @ (w-) Brakling sover to dig out forts. Start newting other heatings The abandoned wells. Let off pope 10:00 Ded roult @ RW & . Sport header hu on water line is brench in order hu leng electrical line a ~ 2' bys. Growth placed in RW-1; KW-? to complete at corking/"growth" level

and other suggless J- conjute installation

~12:30 Reinlide Elente univer

- 12 40 sig sedums of cité 35

or Rw-7 to fw. o to fw.

RW-6 and Rw-7

TIGHT PHOLOGY SUST SONS removalty stert

RWED RW-7 installed of control panels wirech plumbing still needs to be installed.

2/19/95 Rus onsibe 7:18 UGI onsite 7.45 install plumbing & finish miring wells - burned on 2 10030, all appear O.K., set for I hr cycle, each Collect samples from RW-6+ RV-7. UGI finishes well installations + cleanup of well closures. Decon padis removed down to bottom plastic, they will come out tomorrow A.M. tw/ more drums to drum up remaining material

2/12/910

LCRIRWS mitu.

Check on system ofecation - RW-7 was

OK, RW-6 had the "overload" light on,

RW-5 was leaking born the flow meter,

RW-1 was ayding RM-Z & Sgpm, RW-3.

0 ~ 2 Spm, and RW-4 & ~ 1 Spm (cycling)

3/12/96 coit.

mcompletely. Turned of (Kw-5 and and found bithm of flow Meder (besse)

split. W. N need new base. Off line

a Rw-5 until then. Recolibrated

sprtem a Rw-6 - operating OK. Based

on flow of town and well, believe

low flow is in part due to lower

wate table and that the purpos

need cleaning. With schedule for

next week.

STECO. Checked RW-2 and form SECO. Checked RW-2 and formal Flow & 2 spm. Pulled pictry implor and cleaned parts. Reglined and Started gump - well producing a 15 spr. Replaced broken bottom plate of RW-5 and turned back on - no flow on outo some on hand. RW-4 will pump of 6 spm, however: Warrich control ion - cycling project - suspect possible commin of the first 3/18/16 cmt
electrodes. W.M need to pull pump to
check Rw-3 keeps tripping circuit;
Agreen to be load on Motor pulla
dirty pump. Rw-1 pumps a 2 gpm
and agreen & be highting the check blive18. a higher pump rate occurs when
discinned led from the discharge line.
Rw-0. I Pw-7 agreen & he functioning
normally. Normo 29 bernels from
well motallation witivities.

4-2-96

RWS, LCR, CS onsite 8:00

meet eokel kamp + 3 tart

nushing tower, Set up Hermit

on MS-3, RW-7, RW-6, +MW-6

O) 2 9:000

initial WLs

MW-6 85.413

RW-6 36.603

RW-7 39.420

MS-3 26.578

clean + replace pumps
I'm RW 30 RW 4 both

ven of all ed both

ven of all ed both

WLS 32375 A204

RW 6 32978

RW 7 35.013 D= 4.4

AS-3 26.420 D= 16

Note: RW 6 piczometer had

cable cott spliced in field
values are subject to

LARGE errors

System online 2 24:15

pumping 6) 290 sql/ 14:20 min

RW-3 running constantly

not shutting off, offer

5 min, pump for 1:105)

2149pm

Turn on RW-4, pumping well offsite 17:00

H/9/96
Retrieved Hermit from wells RW-0,
RW-7, MS-3, MW-6. Clecked system

Tower (~18 ggm). Cell wells;
were functioning w/ RW-10 < 1 gpm,
KW-Z & 15 ggm, RW-3 c ~ 2 gpm, RW-4
0~ 1 gpm - Cycle times o EW-6:7 ~ 4 km

Y/1296 RWS+LCR, onsite t set up tharmit to test turn of RW-6+ RW-7-fortest, WES Bridge 29.13

4/22/96 RW)

Rund Lault dim,

Rund i 73 x 27

0 94 x 48.5

Rund 0 84 4 46

Rund 0 72 x 27

Rund 0 72 x 27

Rund 0 72 x 27

Rund 0 72 x 27

Rund 0 88 x 48

Rund 0 88 x 48

Rund 0 88 x 44

-d ~ Idy c P.W-S.

dump data from
Hermits trestart
tests = 16.00. Flow
Gtower & 30spm immediate
after turning on Rub-tRh-7
offsite 16.030

4-29-96
RWS+CMS onsite, me et LCR
Dubois creek is up to
top of bank, Hermit 1000
appears to be lost.
collect water samples
from Mw-2, Mw-3, Mw-4
MW-6, tower trecovery
wells. I vot sample
was collected from
tank inside SECO that
HLC collects in prior
to being pumped
into tower.

4-30-96 ensite = 9:20 meet vor services Boland, with MDNB, Neil Elfring Geolar's Sorvey for well sampling audit. Sampled MW-5, MS-1, MS-2, MS-6, SWGW/B, + WL in MS-5- MS-3 ways broken = 2.5 bs + offset ~ 3/4" a bailer would not fit down casing. Voe approved our methodologies that no major comments other than he was worried about the bailers Burlington has left near some of the wells Neil only comment was the lack of weep holes in the protective casings,

5-1-96.
RWS+CMS-ONSIDE
Sample SWGW-B, DS, C, LS,
A, + AS. Survey RW-6+7,
recovery line.

517/96 Rain ~70 Omaile do upon MS-3. Duy out around well, removing cencrete plus, protective casing, and section of butten pipe. Break recurred ~ 2.0 down at a threaded joint. Placed a low-flow 2" compression fitting steed over the thirting pipe and connected to new rise Section. Congression bething were dephened, then benvinite was placed around slave and hydrated. Quikiete was mixed placed in the hole to bring to near surface and set the new 12 hameter protective cover (flush-mount). Used 16 600 bags. Left & 15:45

Flylage
RWS consite 28:15
check well MS-3 repair,
looks good clean up
around well collect
tower sample + ATAS
duplication

5/13/94 cck Pr bring 70°
09:00 Onsite for additional development
of Rw-1, Check Rw-1: flowmake
not rejecting: take off-time: remove
pump in preparation for development using
Things-it.
~10:30 United Gerscience crew (Rob Vojt-diller)
accives on site. Unbacd ATV
~11:00 Set up to Rw-1: prepare to add
Theresit. jetad Flins "I nite
Screen interval. Used surge
block to further stimulate removal
of clay Surging would attende af
letting well set for 1/2 or 1 his interval.
U.G. added water to do crude falling.
Income of tests. Initial indication

5/13/96 cm+
were that so significant
improvement had occurred.

18:10 Crew still working an surging.
Will pury out Things a end

LCK depart.

(Crew left a 20:00 per unmurranter.

w/ J. Sakmith a 5/14/94)

5-16-96- Fax to Paul 4-2 thre 5-13

5/18/96 Sunny ~85.90° a 12:30 pm ~12:30 LCX & CMS onsite in regime to call from P. Straatmaan rejarding leak a blower.

13:00 Observed operation a fower and found no evidence of leakage, mily condensation on Flow muter Took of producing to check each well.

RW-5,47 appear to be recensing normally. RW-4 eyeling for an average on gut of 1-2 gpm. RW-1 eyeling for an average on gut of about

5/17/96 cont of 1.5 gpm. Kw-3 cycling con werage outget of ~3.5 spin (Pung or for a 1 minuse and 7.5 gallow, then of for about 1 minute (+). RW-2 runs constinuousk e ~ 12 gpm. ~14:36 West to get Stractmann to have kin point out what he observed By the Line we returned, "The condition" was manifest. Water was spray in from the blower air intake on to the inside of the blower housing. Shut system Lown to see what might be happening. Removed reubber sleeve o water discharge end Ke view maide Lower. No: inductions of problem observed. Reassorted parts; turned ystem back on . Hinwel spraying noted. would return to test blower / motor ~1600 Deput site

5/20/96 Song 90°

-//:00 CCR meta. No absenced spray from
blower; some spray from discharge @

Sleave existing tower. Turned Ab

S/20/96 cont. well pumps; shut of blower. Removed outer housing to inspect. Blower varies intact and move freely. Some water present along bottom of piping from blower to tower hammed water descharge line to look made Lower. Used Giming gun to check In proper blower revolution. Rated ? 3500 rpm; measured 3543±. Reassembled connections and restant system. No leakage odischarge sleeve ad no spray from blower observed. RW-4 did not turn in. Starter had apparently already tripped before. Reset circuit and telemed in "hand". Starte injuged then flyged of het fower ff-well return to trouble shoot. Replace protective housing over blower - will mondon, Discharge @ Hower ~ ZU gpm. Note water level in Disons Creek in receding - ~ 3 fx below bank tog. ~14:30 Let i sito

5/28/90

RWS, CES onsite = 7:00 Remove balls from tower + start oleaning balls below lower sampling part. Balls are wolded bosether + very hard to break out + remove (22 " a bove lower screen). Work on balls bill & 11:00 then Fill lover portion of tower In Hill, add G/A (acid) & break for lunch. Balls are noticibly cleaner 1. after lunch (212/00). · Fokal kamp onsite 13:00, start repacking tower = 14:30 = 80% of balls bolbu saming port were cleaned before repacking. Tower back on 15:00, 24 spm \ 5 min are immediately after restarts. offsibe 16:15:

5/30/96 RWS/CMS onside 7:45 begin preping drums for removal Laidlaw ansite 8:10 (he had been on wrong side Prums loaded (1909 them) + offsite 10:30, start 10 drums : Replace centacts & heaters on RW-4, still did not nork Prims oleanedt stacked by septic system
offsite & 3.00 Cflows tower
145pm 6715min. ave.) 5/39/96 Rusicms onsite 815 Replace motor + / eads (motor may be OK) flant toner = 16 com (smin) creek flooding into drange ditches Affrice 2 13:00

34					
	6-19	- 16			
<u>·</u>	CM				
	Arrive	0 01	Ste	17.	30
	Turne	d off	- all	well	5
	Pource	Clor.	ne dow	hall !	2345
	well				2, 3, 7, 5
)	- 8 9			
	3				
	5	6			
	Lett-	() (4-	
		5.7.5	. 13		
	6/20 Bw5/1	CMS	nsite		
	clean	wells	RW-2	+RW-	,
	VERY -didn	dirty	r. Rw	-coin	-ol 1000
	clean	flow "	reber (5) tou	ere

6/21 RWS/CMS onsite pump chlorine from wellst acidize In G/A + B/E treatment. surge again after 3-4 hours. RW-1 pulled but did not 6/24 RWS/LCRonsibe reconnect wells & start pumping Flows (spm)
RW-1 low (cycles)
RW-2 ~12 Rw3 ≈8 Tower 225 9 composite soil samples for pH collected, map

6-27-96 Cms/LCR

Acrived on sile 12:30. 500 + -12
blowers & all RW. Repaired
plumping on blown 5+11
leating at top consistion.
Turn & systim back on
at 16:30. Lett 3+e.

7-1-96 Cms/Rws
Acrived on ste 12:30.

Insuprect wells.

Rw-1 Not crayms.

Pw-2 Tripped bookerd.

On Stuffed. Seened to

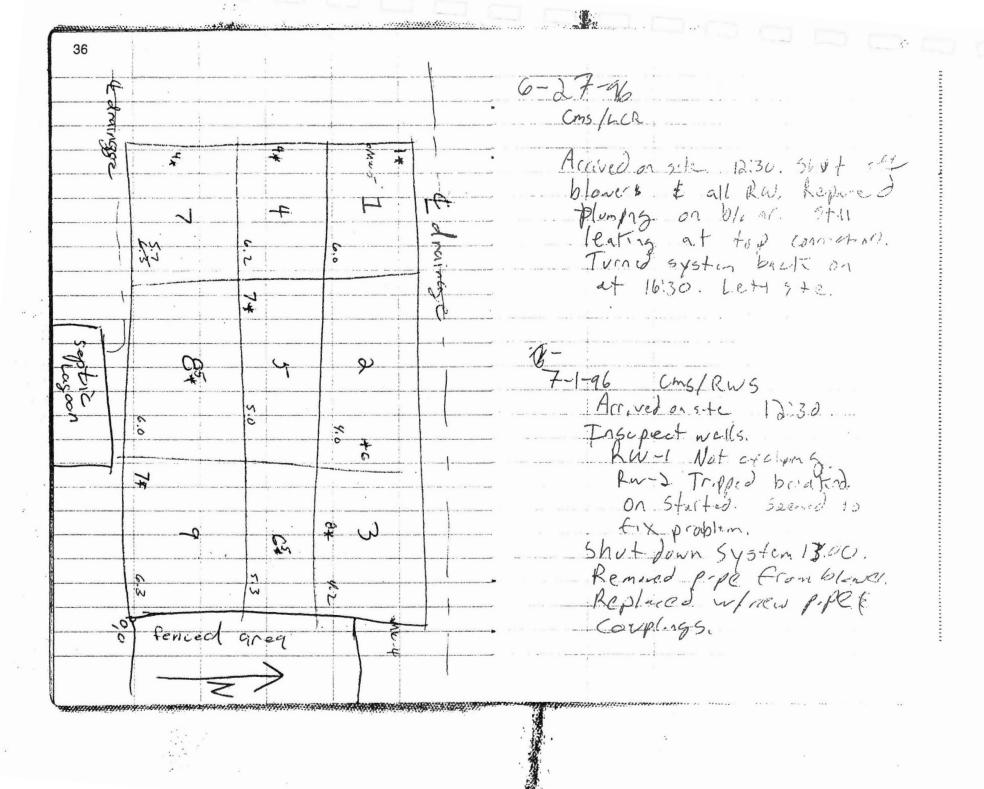
Ex problem.

Shut Jown System 13:00.

Remind pope Cromblems.

Replaced where pope (Comblems).

Couplings.



electrical imports in RW-5. Lw-5

-0900 Full gump; motor out of Kge-1 in pregnation for abandrament

-11.15 On kole - Start to dull along side

-11:45 Completed busking as growt let up

hely gull i recover well materials

12:00 Dull kit toe short to run through both sides | not enough room on spositi side of cosin, to drill Schmidt leaves

-12:45 Dull out other side. Pull on casing Cosing backe & coughing adjoining

-13:05 Discuss options as nij shuddown

proceeds sown leaves to get supplies

La regissement will

18:30 Decide Hut must contact wellheart

review a se whother we can use minuse of here to dill out materials. Threed cellno ora in- time is not nich to receive to receive to the cell of the country of the count

~13:43 Laft site.

=0710 CCR, REUCHS mule. Fall pur.,
motor out of Ru-3 for draws.

- 0750 US arrives ensite sets up vo dul

~08:15 Start cleaning gung garts ~0820 Start drilling well at 6'4 45A:

Grew starts to add walk to engene to maintain head against formation. Wat in cleaning pump parts

-10:00 Robo i center plus out: augers being pulled.

From tion holding up, verifit of wate,
however crew adds a few transfulle
of G-150 to woter w/s significant

mujung. G-150 is not likely to odd much to the thickness of the fluid. Con Vinue to pull wegers - hole holding open to 49.8 after augus fulled 210:15 Start accombling Screen and placence in boschole. Screen ; covery in place. Some slough, into well - bo Hom (~49', Will remeasure later. Note still year Crew starts to prepare to tremie sand w/1" Is pige ~ 10:45 Sund mt flowing down treme, even uf water. Try placing send around screen by pouring through water column and using trame give to tamp and de Vermine sand level. -11:15 Place 30 1/2 cubic foot bags of seend (5016 bags Morie Filtration Sand GH-9) w/ top of said brought to w/i 7' of surface. Decided & do some sugar. In encourage settlement: development of sand just kefor placing bendeniti scal 11:30 Crew takes lunch breek ; jet supplies ~ 13100 Crew continue /shorts development. - 14:00 Sand pech diograd to ~10' bgs. Sot.

pump in Rw-3 to ariculate after cisoring

414118 Set up to grout up old Kurt, Jeed ? bag of wyo les Emerapeus, closed grace to place ~80 gallere of Exocloper grand. Coursed surging. Out falling mad when indicate the socie evel disputed, to I this time - much repended rate office Craw packs my for the any Added 3 min bago of sand to king top of son do to 6 030 Then added the halita chipm to " 5 perfrom surfice and tydisted, LCC CKS horked up RW-3, Puneyed @ 9-10 3 pep In 15 galling he fore sem-cycling Com muster stown down is brighty stopp, that resumer e ~9 gpm 12tz. Check lower flow meder - average - 20 gpm 1/10/15 2/6:30

Pt Jumy -65 LCR. CM' onsile prince channe puny grado , UG com caraba della as And trackere and delivered but they herd is got coming to small be book lot in morrow

~ 10:00 Sty cleaning parto- clear brush from around feremete, wells ~11:00 Reserve dearing parts. on site. com gets sull to spend around wells uf high growth to knock down weeds, etc. Uf gets back hoe down to new RW-1 location to find the in to rewreng lines. Handshovel hits concrete in east side of var/+ - used back has cast i month of RW-1 control panel. Backhoe oxerator religes elbow (45°) w/bucket Leth - shut down recovery system load. hand shored to expose further. ~14:30 Duy up back hoe to furthe expose recovery line and operator carteles the electrical enduit u/ backlose Leeth. PVC conduit bend - coupling controlgened break. Had CMS turn off wient inside SECO. No apparent break in electrial line evident in control junel.

~15:00 Continued diging but vault sur w/ backhoe, hand degin, wow unter relective conduito -15:15 Schmidt who heaven to get FIC Littings to repair line. ~16:15 Samuel unable to wall complete on Fittings - mot centure of wife considers will work. Decided to leave system to and have Uf check frohe ~16:30 Depart site Sunny 60° 2 0800 -0800 Onsite (Len). Call from US about problems Anding Sittings. ~0830 Found supplies in St Cours - Dock UF trying the stip coupling, to save time. If they ain't hald - Of will have do correct.

09:00 UG starts regain of water line ~10:00 Smmy of Eckethany Electric Lease line From RW-1 to see if yesterday tug caused a justilion. Checks OK. He does not know what might to

causing the overload sheetdownse Kw-6,7. He thought Rw-7 could be age of pump starter on setting. Or this time he did not suggest any modifications.

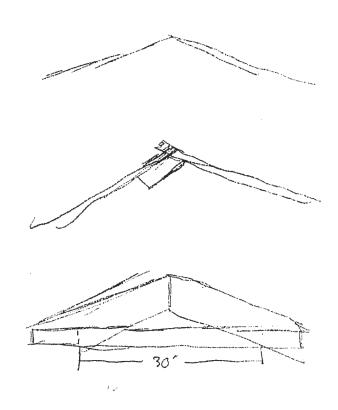
-11:45 Shill working on plumbing from water, line in new vacelt. Four fost wion casin, vacelt in place. Take breek to get supplies / hunch. Lik peaks up coil @ Crescent

"13 DD Fut new Starter on Rw-5.

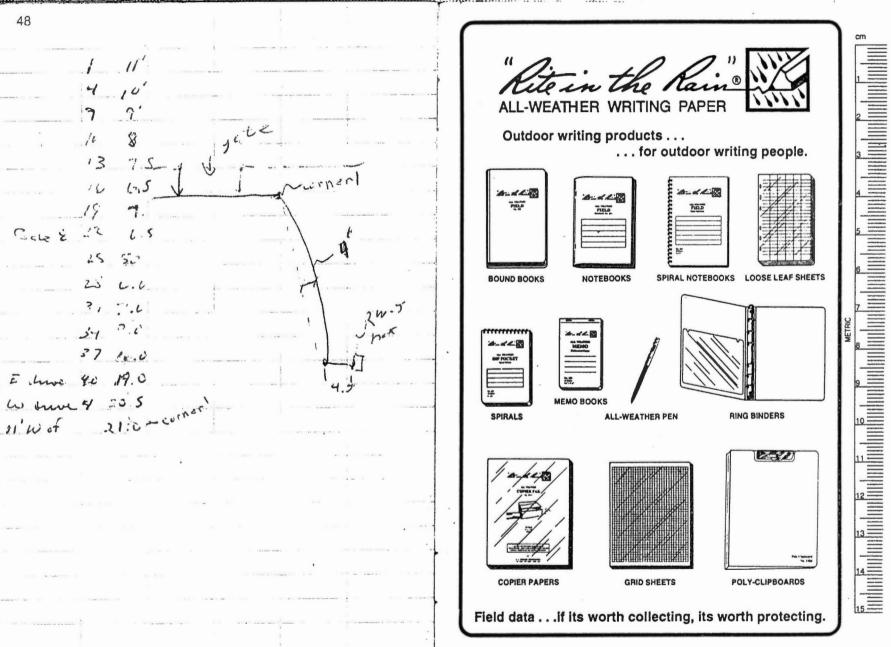
~13:30 OG resums plumbing i electrical conduct plecement for new Ku-1 vault. Set up to pump Kw-1 and discharge water into ~100 gallon tank. Status c ~ 20' 895 ±

or system to test. Lines hold-bein backfill

~ 16:30 Set pump who RW-1. Pumped for ~ 3.5 minutes o ~ 9 gpm then started to cycle. Took ~ 9 minutes for water to recover ~ 8'. Observed mly come cycle. 73 x22 id min



621-26pie603



Sept 13, 1996

Still working - recharge rate better than well recently abandoned - but in creek approaching normal stage comprision to not equal. Tried to replace old warried controller in RW-3 - lident work per writing instructions. Replaced fuses (2) in RW-5. Turned on again, blew I fuse. Changed writing etop to see of it made a difference. Caucad heater to ylow another fuse. Disconnected wries it bottom of starter to ylow another fuse. Disconnected wries it bottom of starter, he ones to well a motor. Cheeked KW-6:7.

Both in overload Roset, ran ok.

On site for well maintenance. Replaced Warrick level control unit in RW3.

Needed to reverse 7'10' leads is.

Warrick to work. Flow meter P

RW-3 dist and not registering, so

not possible to observe. Note that

Warrich did not cause starter to

disengage during first three minute of greature. Took the old Wendle from Rw-3 to Rw-5 to replace broken one on KW 5. Beconnected wire to germy motor and rewired the impact to the standar When turned in, account breake in SECO tryped althout Excellence to cheek. Wing agreered of - 505 period short in down well wires or moter. Pulled purplementer form 60.5. Found a split in the splice connecting motor leads to prever. Cut and respliced loads (cheffing cherked motor - no obscious short. Regimed in well - green ted well, Purpod @ > 10g. until executed, then sheet of Checked Ew-1. well eyelen , tower flow mete indicated rate of Digital compried to - Tagon also installates When allowed to diced my a snaple port vs treatment system, rate kieled up. Suggests problem up pung possible motor. Checked Rw- b and Rw-7.

Both in rues (oad. Reset and ran fine Wells were reset a rogod at had not tryped rues load to of 1500. Need to check w/ Coyde to see what might be going on with controller.

10/10/96

ccr cms a site a - 0800 to meet BOAT fro Line applemation, Rain p site night - some standing water Showed Drundaries to Richt Roger of 1300T. They would check to see if lime could still be spread and titled. Went to RW-1, still slow. Polled well gump; motor and found it very dirty. significant build up in I month. No abvious damaged parts. Replaced uf clean parts and reset in well. Punged e ~ 9 gpm, Cycling rate/period valenced 1:45, 4:30, 9:10. Offenoise, operation opposed OK. RW-10 mol RW-7 read overload. Charled ul Runkemeyer who said he found blinking overland 3 times in last week, though me time,

both for wells. House I batom of veult In

Rev-to not placed league of Quicknote

(sond min) along floor of vault to

improve wet weather use, minimize

water infiltration along bottom theep
interior cleaner. Since flow relang Kill?

was not working, pulled pump; motor

and cleaned sump. Fump very dister
sitt beuldup and scale on parts. The

lime trick arrived in site ~ 1900!

spread the 9 tens across the area

between the disches, the west Sonce

of the lagor and out to the west

end of the flood plein.

10/28/96 RWS/CMS onsite

start sampling wells.

RWG+7 in overload when

we arrived ensite

LCR onsite 11:30 - 12:30

the check RWG+7.

RW7 in overload when

we depart (4/15) voltage

OK (490 all 3 phases)

amps when Pailing-21,7

when running 21,3-1,4

10/29 tower samples) 9:00

flows) tower 211,5 gpm (1m/n

Recovery well samples and)

RW-3 9:16

RW-2 9:15

RW-1 9:25

RW-5 24.58

RW-6 15:50

RW-7 15:50

finished sampling
uells, borned off
RW wellst pourced
in chlorine
RW-1 4.5 gal
RW-2 6
RW-3 6
RW-4 4.5
RW-5
RW-5
RW-7
3

10/30 electrice acid treat

RW-2. RW+, RW-1, +

RW-3 still smell of

chlorine thill be treated

tomorrow.

Pulled RW-7. All parts

clean pump appears

O.K. Remove motiont

send in for testing.

10-31 acid treat RK-3+
RW-4. RW-1 blew
starter we replace
starter + it trips broaken
In Blog.
Claga RW-2+ turnon,
13 spm flow

Start removing balls from tower, poplace plumbing on RW-4+ insert electrical box

· M Croek 27,51

11-1 sample Ru-5 WL 1832 RW-5(11-96)5713:15

Sinish cleaning tower

I tum system on RW-23 +

Yworking good Cestimate

20pm Flower flow meter

not norking)

RW-1,5,6,47 not northing perprevious notes survey new RW 1 ela BA sld RW 13M HI 2.52 RW-1 4.15 loc 85' N, 6.5' East of RW-13M

11/27 RWS on site

try restricting flows?

RW-6 to test over load

condition - it still imm. trips.

- chack condition RWZ2, 3,

4,5 - no sign of freezing.

-replace flow moter & towar,

works good

Alous RW-4 22-35pm

RW-3 22-35pm

RW-2 213-145pm

Smin flows tower = 15 spm

12-6-96 CMS/LCR Ons.te 9:00.

Met Dive Walerman from Vain Eletric. We tried to solve the problems related to RW 6,7,5,1

Could not figure out problem on RWG & RW7.

RW-1 had a problem with the wiring to the motor.

Dave left the site at 13:00 & would contact coyote (minutatures of the pumpsystem on Ruist)
we should call him it the problem persts after we fix Ru 1\$5

RW-5 needs to have the

the wiring. RW-1 & fixed the wiring. RW-1 pump running time but the Office Geens to

be malfunctioning. We could not turn off the pump after it. Started.

CMS/LCR collected tower sample & lett 9. +e at 15:45.

12/16/96 Cms arrived on site at 12:00

Observed no flow out the tower.

Checked each well.

RW-2 Starter tropped Reset the Starter and the pump is werking. The Flow meter does not work but there is flow out of the sampling port. The flow at at the tower is approximately 1-2 gallons per minute.

RW-3 has power to the motor but no flow out the sampling part indicating that the pump is closped.

RW-4 has power to the motor but no flow out the Sampling port indicating the pump 13 clogged.

Replaced Warrick (level pump down device) on RW-1. When RW-1 is turned on the pump pumps water but will not shut off when all of the water is pumped out of the well. The Warrick works when the reference points (long, shurt & ground & wines) are disconnected. But when the reference wires are Connected the warrick does not work properly. This implies that the wires are hooked up wrong or there is a Short in the System.

Replaced the warrick in RW-5.

Formed RW-5. When RW-5 is
turned on the heater co.ls glow
so I shut RW-5 off. Replaced
the blown fuse. Disconnect the
motor leads & turned the RW-5
on.

The Starter engaged without a problem indicating the pump or wiring in RW-D is fielty.

RW-6 & RW-7 were both in overled condition so I reset them. Both wells pumped & went to ender load.

Offs.te 15:50

APPENDIX F

Waste Manifests



SE	FORM A
	Customer Notification And Certification Page $\frac{10000000}{2}$
Generat	tor Name/Location: Dudsney Corp/Washington Mi
	D. Number: MDD 068549492
Waste l	Profile or ARF Designation: <u>TL92MSIO</u>
Manife	st Number: _OOOl
EPA W	Vaste Number(s): F002
Waste .	Analysis Available? Yes (attached) NoOn file at receiving facility
Unrestr Mark th standard	icted Waste Notification (Category 1) se statement below if you generate a waste that is not a land disposal restricted waste (the waste has no applicable treatment is).
	I notify that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR §268, Subpart D or any applicable prohibitions set forth in 40 CFR §268.32 or RCRA Section 3004(d).
Mark st NOTE- categor in 40 C B, or a	ted Waste/Debris Notification (Category 2) tatement (2a) below if you generate a waste that is restricted from land disposal (the waste has applicable treatment standards)1: A waste may pass one or more standards and require treatment or be varianced for others. In this case, all applicable ies must be checked. NOTE-2: D001, D002 and D012 - D043 wastes must be evaluated for underlying constituents found FR §268. 48 (Table UTS), that are reasonably expected to be present. A list of these constituents must be included on FORM ttached to and accompany this notification with each waste shipment. Mark statement (2b) if you generate a debris waste that treated to the alternate debris standards located in 40 CFR §268.45.
×	(2a) Restricted Waste Notification I notify that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is subject to the treatment standards specified in 40 CFR \$268 Subpart D. The waste: (a) must be treated to the appropriate regulatory treatment standard, by the appropriate regulatory treatment method; (b) qualifies for a variance as described in category 3 below; or (c) meets some or all of the standards as described in Category 4 below.
	(2b) Alternate Debris Treatment Notification: This hazardous debris is subject to the alternate treatment standards of 40 CFR §268.45. The waste contains the following contaminants subject to treatment [check all that apply]: §268.45(b)(1) - Toxicity characteristic debris; §268.45(b)(2) - Debris contaminated with listed waste; §268.45(b)(3) - Cyanide reactive debris.
Mark o	cted Waste Variance Notification (Category 3) the statement below and list the applicable variance date on Form B, if you generate a waste which does not require treatment to land disposal because of a variance (including a case-by-case extension under 40 CFR §268.5, a nationwide variance under R §268 Subpart C, a no migration petition under 40 CFR §268.6, or other applicable variance).
	I notify pursuant to 40 CFR §268.7(a)(3) that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that this waste is subject to a national capacity variance under 40 CFR §268 Subpart C, or a case-by-case extension under 40 CFR §268.5 or an exemption under 40 CFR §268.6.

Restricted Waste Certification (Treatment Standards Met) (Category 4)

Mark the certification statement below if you generate a waste that is restricted from land disposal (the waste has applicable treatment standards), and the waste meets the standards as generated. Note: All applicable constituent standards must be accounted for. A waste may pass one or more standards and require treatment or be variance for other constituents. In this case, all applicable categories must be checked.

	I certify under penalty of law that I personally have examined and am familiar with the w	raste throug	gh analysis and testing or	through knowledge of the waste
	to support this certification that the waste complies with the treatment standards specif	fied in 40 (CFR Part 268 Subpart D	and all applicable prohibitions
	set forth in 40 CFR 268.32 or RCRA § 3004(d). I believe that the information I sub	mitted is t	rue, accurate and comple	ete. I am aware that there are
	significant penalties for submitting a false certification, including the possibility of fine	e and impr	isonment.	101
	Viscell le Schund		1/30	101
SIGNATI	URE: 1633011 W Jeft Car	DATE:		70
	URE: Russell W Schwab		11	and fine
PKININ	AME:	TITLE:	authorized	CIC. TIND (OF.

Revised 10/94 585-7510-585003

Hussman Corps.

LAID	LAW
ENVIRONM	

FORM A **Customer Notification And Certification** Page / of 2 Generator Name/Location: EPA I.D. Number: I492MSIUI Waste Profile or ARF Designation: Manifest Number: 0001 EPA Waste Number(s): FOO2 Waste Analysis Available? Yes (attached) _____ No ____On file at receiving facility Unrestricted Waste Notification (Category 1) Mark the statement below if you generate a waste that is not a land disposal restricted waste (the waste has no applicable treatment standards). I notify that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is not restricted as specified in 40 CFR §268, Subpart D or any applicable prohibitions set forth in 40 CFR §268.32 or RCRA Section 3004(d). Restricted Waste/Debris Notification (Category 2) Mark statement (2a) below if you generate a waste that is restricted from land disposal (the waste has applicable treatment standards). NOTE-1: A waste may pass one or more standards and require treatment or be varianced for others. In this case, all applicable categories must be checked. NOTE-2: D001, D002 and D012 - D043 wastes must be evaluated for underlying constituents found in 40 CFR §268. 48 (Table UTS), that are reasonably expected to be present. A list of these constituents must be included on FORM B, or attached to and accompany this notification with each waste shipment. Mark statement (2b) if you generate a debris waste that will be treated to the alternate debris standards located in 40 CFR §268.45. (2a) Restricted Waste Notification I notify that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that the waste is subject to the treatment standards specified in 40 CFR \$268 Subpart D. The waste: (a) must be treated to the appropriate regulatory treatment standard, by the appropriate regulatory treatment method; (b) qualifies for a variance as described in category 3 below; or (c) meets some or all of the standards as described in Category 4 below. (2b) Alternate Debris Treatment Notification: This hazardous debris is subject to the alternate treatment standards of 40 CFR §268.45. The waste contains the following contaminants subject to treatment [check all that apply]: §268.45(b)(1) - Toxicity characteristic debris; §268.45(b)(2) - Debris contaminated with listed waste; §268.45(b)(3) - Cyanide reactive debris. Restricted Waste Variance Notification (Category 3) Mark the statement below and list the applicable variance date on Form B, if you generate a waste which does not require treatment prior to land disposal because of a variance (including a case-by-case extension under 40 CFR §268.5, a nationwide variance under 40 CFR §268 Subpart C, a no migration petition under 40 CFR §268.6, or other applicable variance). I notify pursuant to 40 CFR §268.7(a)(3) that I am familiar with the waste through analysis and testing or through knowledge of the waste to support this notification that this waste is subject to a national capacity variance under 40 CFR §268 Subpart C, or a case-by-case extension under 40 CFR §268.5, or an exemption under 40 CFR §268.6. Restricted Waste Certification (Treatment Standards Met) (Category 4) Mark the certification statement below if you generate a waste that is restricted from land disposal (the waste has applicable treatment standards), and the waste meets the standards as generated. Note: All applicable constituent standards must be accounted for. A waste may pass one or more standards and require treatment or be variance for other constituents. In this case, all applicable categories must be checked.

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste

to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA § 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are

significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

Revised 10/94 585-7510-585003

Hussman Corps

FORM B1 (Must be accompanied by Form A) Generator Name/Location Thussman Corp / Washingin Page 2 of 2 MODD685494 PA I.D. Number: Manifest: 0001 Waste Profile or Category **EPA** or State Variance Description/Sub Category Treatability Waste Constituents or Waste Code ARF No. Date Group (WW Legend # or NWW) 492MS U 2A FOUL NONE Mile CONSTITUENTS IN SOLVENT, CALIFORNIA LIST AND CHARACTERISTIC WASTES. F001 - F005 spent solvents **Technology-Based standards For F005** Legend # **Constituent Name** 19 Nitrobenzene when the constituent is the only listed 20 Pyridine 1 Acetone F00-F005 solvent 2 Benzene 21 Tetrachloroethylene Legend # **Constituent Name** 3 n-Butyl alcohol 22 32 2-Ethoxyethanol Carbon disulfide *4 23 1,1,1-Trichloroethane 33 2-Nitropropane 5 Carbon tetrachloride 24 1,1,2-Trichloroethane Chlorobenzene 25 Trichlorothylene 6 Legends 34-43 RESERVED 7 Cresol (m-and p-isomers) 1,1,2-Trichloro-1,2,2-26 8 o-Cresol trifluoroethane **CALIFORNIA LIST WASTES** *9 Cyclohexanone 27 Trichloromonofluoro-methane Legend # **Constituent Name** 1.2-Dichlorobenzene 28 10 Xylenes (total) 44 Nickel Ethyl Acetate 11 45 Thallium 12 Ethyl Benzene Legends 29-31 RESERVED 46 Cyanide (Liquid) Ethyl Ether 13 47 Liquid Polychlorinated 14 Isobutyl alcohol * If these constituents are present alone or Biphenyls (PCB's) in any combination of the three, then non *15 Methanol 48 Halogenated Organic Methylene Chloride 16 waste water forms of these constituents compounds (HOC's) Methyl Ethyl Ketone 17 must be treated to TCLP levels as indicated

SEE BACK FOR THE UNIVERSAL

TREATMENT STANDARDS (UTS),

Legends 49 - 264

Revised 10/94 585-7512-585003

18

Methyl isobutyl ketone

in §268.40.

NSTRUCTIONS FOR THE COM-LETION OF THIS FORM ARE ON A F RATE SHEET. DOCUMENT MUST BE USED ALL MISSOURI-DESTINED MENTS

EPA Form 8700-22 (Rev. 9-94) MDNR-HWG 10

MISSOURI DEPARTMENT OF NATURAL RESOURCES

Division of Environmental Quality Hazardous Waste Program P.O. Box 176 Jefferson City, Missouri 65102 314-751-3176

EMERGENCY RESPONSE U.S. COAST GUARD 1-800-424-8802 CHEM TRCC 1-800-424-9300

DEPT OF NATURAL RESOURCES 314-634-2436

HAZARDOUS WASTE MANIFEST

ı	print or type (Form designed for use on elite (12-pitch)	(typewriter.)		Fgr	m Approved OME	3 No 2050-0039, Ex	pires 9-30-96	
•	UNIFORM HAZARDOUS	Generator's US EPA ID No.	Manifest Document No.	2. Page	_ Informati	ion in the shade	d areas	
H	WASTE MANIFEST			of	_ is require	ed by State law.		
11	3. Generator's Name and Mailing Address			AzMissouri A	larifest Documer	t Number		ĺ
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	4. Generator's Phone (구현소) 공연소 경찰의				منسال والمستانية		1000	
	5. Transporter 1 Company Name	6. US EPA ID Number			jib.		建筑	ŀ
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	7. Transporter 2 Company Name	8. US EPA ID Number		EMO Ten	in .		对自 然为。	
•			11111	F Transport	A se se duca grant them at the re-	#6/286 V		ဖ
	9. Designated Facility Name and Site Address	10. US EPA ID Number		9 Sinh Etc		- W-1		R
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	11. US DOT Description (Including Proper Shipping Nam	ne, Hazard Class, and ID Number)	12. Contain	ers	13. Total	14. Unit	T.O.	9
			Number	Туре	Quantity V	Vt/Vol.		ပ
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1	15. Special Handling Instructions and Additional Informa	ation Substitute INFOTPA	K. HOLL					1
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Ц								1 5
١	16. GENERATOR'S CERTIFICATION: I hereby declare the and tabeled, and are in all respects in proper condition for	it the contents of this consignment are fully and ac or transport by highway according to applicable intern	ccurately described about ational and national gov	we by proper a vernment regula	thipping name and tions and applications	d are classified, pa He state regulations.	cked, marked,	[
1	If I am a large quantity generator, I certify that I have and that I have selected the practicable method of tre	a program in place to reduce the volume and toxi	city of waste generated	to the degree	I have determine	d to be economica	lly practicable	2
П	OR, if I am a small quantity generator, I have made a goo	od faith effort to minimize my waste generation and se	lect the best waste man	agement metho	d available to me to	hat I can afford.	, citaronincia,] !
	Printed/Typed Name	Signature	10/1/7	Art.		Month	Day Year	
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i I A	 18. Transporter 2 Acknowledgement of Receipt of Materia 						Date	- 4
ļΤ	Printed/Typed Name	Signature				Month	Day Year	;
R								4 8
	19. Discrepancy Indication Space							9
F	1							3
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ľ	1] ;
H	20. Designated Facility Owner or Operator: Certification of	of receipt of hazardous materials covered by this ma	nifest except as noted	in Item 19.			Date]
1;	Drinted/Turned Name	Signature				Month	Day Year	1
ľ	•					1.1	. 1 .	L

SEE INSTRUCTIONS SHOULD PART 1 & WITHIN 35 DAYS



June 13, 1996

HUSSMAN CORP 5025 OLD HIGHWAY 100 EAST WASHINGTON MO 63090

Dear Sir/Madam:

In accordance with the requirements of 40 CFR 264.12 (b), Laidlaw Environmental Services (GS), Inc. is hereby notifying you that our facility located at 3536 Fite Road in Millington, Tennessee (USEPA ID. No. TND 000 614 321) has the appropriate permit(s) for, and can accept the hazardous wastes noted below.

PROFILE#

WASTE STREAM NAME

I492MS101

CONTAMINATED SOIL WASTE

On behalf of Laidlaw,

William Coulter

Material Routing Coordinator

prs

APPENDIX G

Abandonment and Certification Records

. PECELLED WILSON, INC.

P.O. BOX 250 ROLLA, MO 65401 (314) 368-2165 FAX: (314) 368-2111



MISSOURI DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGY AND LAND SURVEY WELLHEAD PROTECTION SECTION WELL DRILLERS UNIT

JAM 210 1.500

VARIANCE NUMBER

VARIANCE REQUEST FORM		00401	
, v	VELL OWNER IN	FORMATION	
NAME (LAST, FIRST, MIDDLE)			
SECO PRODUCTS CORPORATION - MIKE M	CDERMOTT		
ADDRESS 5025 OLD UTCHWAY 100 FACT		E	
5025 OLD HIGHWAY 100 EAST	STATE	ZIP	TELEPHONE
WASHINGTON	MO	63090	
,	WELL LOCA	ATION	
COUNTY			
FRANKLIN	25	A A	N. 0117
½, ½, ½,	Section25	Township <u>44</u>	N Range 01W E/W
С	ONTRACTOR IN	FORMATION	
CONTRACTOR NAME		PERMIT NU	
SHANNON AND WILSON INC - LARRY ROS	SEN	2004	PM
11500 OLIVE BLVD SUITE 276			
	STATE	ZIP	TELEPHONE
ST LOUIS	MO	63141	(314) 872-8170
Type of Variance <u>VARIANCE GRANTED TO</u>	PLUG SIX MON	NITORING WELLS	BY PULLING THE CASING AND
., , , , , , , , , , , , , , , , , , ,			
SCREEN WHILE SIMULTANEOUSLY PLACIN	G GROUT. II	THE CASING BR	EAKS DURING PLUGGING, THE
_REMAINDER OF THE PIPE IS NOT REOUI	RED TO BE DE	TILED OUT BUT	BE LEFT IN THE BOREHOLE
AND GROUTED IN PLACE.			
	*	***************************************	
RULE NUMBER MODIFIED: 10 CSR 23- 4.080			················
Reason for Variance MINIMIZE HAZARDOU	IC WACTE CENE	וארדיתגפי	
Reason for VarianceMINIMIZE_HAZARLOO	IN MANIE GENE	TAT TON	
9			
	;-	1 6	0 0 1 2 .
VARIANCE APPROVED (DATE)	ВУ	Michael	y Danishignation
1-24-96 COPY SENT TO OWNER (DATE)	M BY	ICHAEL GAWEDZI	MSKI (/
1-24-96		USAN DAVAULT	
COPY SENT TO CONTRACTOR (DATE)	ВУ		
1-24-96	S	USAN DAVAULT	



MISSOURI DEPARTMENT OF NATURAL RESOURCES DIVISION OF GEOLOGY AND LAND SURVEY WELLHEAD FROM THE TOTAL SECTION WELL DRILLERS UNIT

VARIANCE NUMBER

VARIANCE REQUEST FORM	Λ		546			
	WELL OWNER	INFORMATION				
AME (LAST, FIRST, MIDDLE)	****					
Hussman Corporation/SECO Produc	ts - Dennis I	Dubitsky				
12000 S+ Charles Pools Pd						
12999 St Charles Rock Rd	STATE	ZIP	TELEPH	HONE		
St Louis	мо	63044				
	WELL L	OCATION			-	
DUNTY						
Franklin						
1/4,1/4,1/4,	Section	25Townshi	p <u>44N</u>	Range _	01	EW
	CONTRACTOR	R INFORMATION				
NTRACTOR NAME		٢	ERMIT NUMBER			· · · · · · · · · · · · · · · · · · ·
Shannon & Wilson - LaRRY Rosen			00200	4		
A500 Olivo Plud						
4500 Olive Blvd	STATE	ZIP	TELEPH	HONE		
St Louis	МО	63141		314-872-	-8170	
Type of Variance <u>Variance granted</u> <u>leaving the screen in place and</u>	n#s		-	illing t	the wel	l with
	n#s		-	illing t	the wel	l with
leaving the screen in place and	grouting the		-	illing t	the wel	l with
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leaving the screen in place and use the screen in place and use NUMBER MODIFIED: 10 CSR 23-	grouting the	e well full casing and s	length.	oke as t	the cas	ing
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RULE NUMBER MODIFIED: 10 CSR 23- 4. Reason for Variance The coupling coupling coupling was being pulled. The cuttings	grouting the	e well full	length.	oke as t	the cas	ing
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Reason for VarianceThe coupling comes being pulled. The cuttings disposal as hazardous waste.	grouting the	casing and s	screen brother the screen	oke as t	the cas	ing
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REF. NO. 104966	CHECK NO.	
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STATE WELL NUMBER	CROSS REFERENCE NO.	4
CHECKED BY	ENTERED	····
	Ph 1 Ph 2	Ph 3
APPROVED BY	DATE APPROVED	

NATURAL RESOURCE			STATE WEL	L NUMBER	CR	OSS REFERE	ENCE NO.			4
LAND SURVEY	GT AND		CHECKED E	ВУ	ENT	TERED		Ph 2	Ph 3	
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Hussmann Corporation		- Iau				3/- STAT	4-298	-654		
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5025 Old Highway 100 B	457		NASHIN	STON		M	0	G	3090	
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MISSOURI DEPARTMENT OF NATURAL RESOURCES

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9/22/92	YES NO	r	LINER	USED C	NLY TO H	OLD BACK		DIAMETER	IN
IGINAL DRILLER (IF KNOWN)			DETAILS	FORMA USED T		LIT CONTA	MI-	WEIGHT O	R SDR #
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ROUTE		TRANSMITTAL NO.				
STATE WELL NUMBER		CROSS REFERENCE NO.				
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OWNER STATUS: PRIVATE HOME OWNE	R □ BU	JILDER		DEVELOPER		OTHER	R (SPEC	IFY)Zer	emsib	le Part
URPOSE OF REGISTRATION FORM			Ī	EXISTING WELL CERT			. (0. 20	,.		
ABANDONED WELL	☐ TEST HOL	LE REPOR	RT	SIGNATORE (WELLO	eneted	MD-	1)		DATE	
WELL RECONSTRUCTION	□ OTHER _			al Hal	Tulu	Ro	Er.		4/11	186
FORMATION SUPPLIED BY C							J		/ /	
OCATION OF WELL SHOW LOCATION IN	COUNTY FA		<u>ء</u>	FROM NEAREST TOW			LUDING MI	LEAGE ON	ALL ROA	DS TRAVELED
SECTION PLAT	AREA NO	/		SEE Atlac	hed L	ocatio	n 15.	to Pla	h	
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DESCRIBE LOCATION OF THE WELL SO				-					***************************************	
See attached Licati	in ad Sit	e Plan								
CONTRACTOR'S .	,			PERMIT			,			
NAME Lawrence Ks	SEN / UNITED	Geoscie	<i>NCE</i>	NUMBER	00200	PM PM	0018	75 n	IPM	
ABANDONME	NT OF WELLS				WEL	L RECO	NSTRUC	CTION		100
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ORMER USE OF WELL	211/16			☐ DEEPENING	G OF WE	LL	□ отні	ER		
DOMESTIC (1 TO 3 CONNECTIONS)									FT.	
MULTI-FAMILY HEAT PUMP	☐ EXPLORATORY MONITORING		.E	RAISED CASING	METHOD OF ATTACHMENT STEEL THREADED PLASTIC FUSED					
IRRIGATION	OTHER			INFORMATION	CASING WELDED		CASING GLUED			
DATE ORIGINALLY DRILLED	PUMP REMOVED FRO	M WELL?	9 5		PURPOSE C	COUPI	_ED		DIAMETE	R OF LINER
8/68	☐ YES ☐ N	NO		LINER	USED FORM	ONLY TO I	HOLD BAC	K		IN.
Geotechnology				DETAILS	USED TO SEAL OUT CONT				WEIGHT	OR SDR #
DESCRIBE METHOD USED TO PLUG WELL				MEASURED DEPTH F					TER OF WI	35-4-7-6-36-7-7-6-8-8-8-8-8-8-8
Per variance # 00401							F	T. MATER	RIAL	IN.
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No longer required f	or monitori	ing		PACKER DETAILS	☐ RUBBI	ER T	KER 1	PACKER	FT.	ACKER 3 FT.
			ş-, ,	LINER	POSITION	OF SEAL,	- F1	MAŢERIAL		ENT SLURRY
				GROUT DETAILS	☐ FULL I	LENGTH EEN PACK	ERS	BENTON	ITE [CHIPS
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· · · · · · · · · · · · · · · · · · ·	20KHO HE 22 + 2::-	DI 10 05 5: -	A1 14/2===	GPM	TOP OF T	HE GROUT	SEAL FT.	воттом	OF THE GR	OUT SEAL FT.
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J YES A NO			.5	WELL WAS DEEPENE		DEFIN	P	ESCRIPTI	ON	TIELD
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CONTRACTOR'S SIGNATURE	DAT	TE /_		□ YES □	NO					
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MAD ABANDONED WELL WELL RECONSTRUCTION	☐ TEST HOL	E REPORT		snetec	•	y)	PATI	101
FORMATION SUPPLIED BY C	ONTRACTOR		W Kal	unu	JM		4///	16
DCATION OF WELL SHOW LOCATION IN SECTION PLAT SMALLEST 1/4	ELEVATION AREA NO.	LARGEST ¼	SKETCH THE LOCA FROM NEAREST TOV	WNS OR HIGHW	VAYS			DS TRAVELED
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Per variance # 00401			_					IN.
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WAS THE WELL ABANDONED BECAUSE OF H	OOKING UP TO A PUB	BLIC OR RURAL WAT	0014			FT.		FT
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OF LINER IN. OR SDR # LL CASING STEEL JOINTS ☐ GLUED FT. THREADED ☐ WELDED TYPE USED **DEPTHS SET** MENTS (REASON FOR PLUGGING, KNOWN CONTAMINANTS, ETC.) LINER PACKER 1 PACKER 2 ☐ NONE PACKER □ RUBBER BOOT DETAILS FT. MATERIAL CEMENT SLURRY ROSITION OF SEAL LINER ☐ FULL LENGTH BENTONITE CHIPS
GRANULAR PELLETS GROUT ☐ BETWEEN PACKERS **DETAILS** DEPTH FROM SURFACE TO TOP OF THE GROUT SEAL DEPTH FROM SURFACE TO DEPTH PUMP WAS SET BOTTOM OF THE GROUT SEAL FT. **GPM** WAS THE WELL ABANDONED BECAUSE OF HOOKING UP TO A PUBLIC OR RURAL WATER DEEPENING OF WELL INFORMATION PLY DISTRICT? FORMATION DESCRIPTION DEPTH AX NO YES WELL WAS DEEPENED HECK THE BOX WHICH APPLIES FT. DEEP FROM EREBY CERTIFY THAT THE WELL HEREIN SCRIBED WAS ABANDONED IN ACCORD-CE WITH THE DEPARTMENT OF NATURAL I HEREBY CERTIFY THAT THE WELL HEREIN FT. DEEP DESCRIBED WAS REPAIRED IN ACCORD-ANCE WITH THE DEPARTMENT OF NATURAL RESOURCES REQUIREMENTS FOR THE WAS THE WELL DISINFECTED? RESOURCES REQUIREMENTS FOR THE ABANDONMENT OF WELLS. RACTOR'S SIGNATURE HAGIONS SIGNATURE

| JATE | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JEST | JE ☐ YES □ NO Worke



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ROUTE	TRANSMITTAL NO.				
STATE WELL NUMBER	CROSS REFERENCE NO.				
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NATURAL RESOURCE		STATE WEL	L NUMBER	CR	OSS REFERE	NCE NO.		
LAND SURVEY	IGT AND	CHECKED	ЗҮ	EN.	TERED Ph	1	Ph 2	Ph 3
REGISTRATION	RECORD	APPROVED	BY	DA	TE APPROVE		FIIZ	FIIS
ORMATION SUPPLIED BY O	WNER							
adi -						PHONE		
GESS GENERAL CORPORATION	1010	CITY		10	2/4 STAT	- 198	-6541 ZIP CODE	
799 STCharles Rock			netern	i .		40	63044 ZIP CODE	
1025 Old Huy 100 E	_	Wach	neten		M		63090	
PRIVATE HOME OWNE	_	(<u></u>	DEVELOPER	VZ.	OTHER	(SDECII	FYKesponsil	de Parra
POSE OF REGISTRATION FORM	R DOILDE	-n U	EXISTING WELL CER			(SFEOI	1) Cypins	7
ABANDONED WELL	☐ TEST HOLE RE	PORT	NA (Derig	nated	55-2)		
WELL RECONSTRUCTION	OTHER		SIGNATURE (WELL O	WNER)	10/		4/10	JE C/
ORMATION SUPPLIED BY C	ONTRACTOR		11 Tax	unan	s ru		74	16
CATION OF WELL	COUNTY FRANK	KLIN	SKETCH THE LOCAT			UDING MIL	EAGE ON ALL RO	ADS TRAVELED
HOW LOCATION IN	ELEVATION ~480	·					4.	
	AREA NO.		SEE ATTACK	460 20	CATION	3 751	TE PLAN	
SMALLEST ¼	LAF	RGEST ¼						
	_1/41/4						3	
SEC. 25 TWN.	44 N,RNG. R1	€ EORW				v.		
38. 32 79" LO								
ESCRIBE LOCATION OF THE WELL SO								
See attached location	2 + site plan							
lo .	· ·		was a sufficiency of the same					
	-		4.5					
CONTRACTOR'S Lawrence Ros	sen / United Geo	oscience	PERMIT NUMBER	002004	IPMK	0/87	5 WPM	
ABANDONME	NT OF WELLS			WELI	RECON	ISTRUC	TION	
DEPTH OF THE WELL	DATE ABANDONED		TYPE OF REPAIR					18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	01.101		☐ RAISED CA	SING		LININ	G OF WELL	
below ground surface	2/1/96		☐ DEEPENIN			OTHE		
MER USE OF WELL				LENGTH O	F CASING	ADDED		FT.
DOMESTIC (1 TO 3 CONNECTIONS)	EXPLORATORY TES		RAISED				TTACHMENT	
HEAT PUMP	MONITORING		CASING INFORMATION	STEEL [THREAD	DED F	PLASTIC FL	JSED
IRRIGATION	☐ OTHER		INFORMATION	CASING [OUPLI		CASING G	LUED
DATE ORIGINALLY DRILLED	PUMP REMOVED FROM WELL	L?		PURPOSE OF	LINER	-		TER OF LINER
8/88	☐ YES ☐ NO		LINER	USED O		OLD BACK	-	IN.
BINAL DRILLER (IF KNOWN)			DETAILS	USED TO SEAL OUT CONTINUE ON THE CONTINUE ON T			AMI-	TORSOR#
DESCRIBE METHOD USED TO PLUG WELL			MEASURED DEPTH F				15.76	
- r variance A DOHOL								IN.
g .			MEASURED DEPTH F	DOM SUBEAC	SE TO BOTT	FT		□ STEEL
<u> </u>			MEASURED DEFINA	NOM SUNFAC	DE TO BOTT	JWI OF LINE	JOINTS	GLUED
						FT	I THREADE	Control of the Contro
MENTS (REASON FOR PLUGGING, KNOW	N CONTAMINANTS, ETC.)		LINER	TYPE USED	PACI	KER 1	DEPTHS SET PACKER 2	PACKER 3
to linger required for	menitoring		PACKER DETAILS	RUBBE	R	FT.	FT.	FT.
T Y Y	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	LINER	POSITION		·	MATERIAL C	EMENT SLURRY
			GROUT DETAILS	BETWE	ENGTH EN PACKE	DC I	BENTONITE	☐ CHIPS
			DEPTH PUMP WAS	DEPTH FR			GRANULAR DEPTH FROM SUF	PELLETS FACE TO
			SET	TOP OF TH		SEAL	BOTTOM OF THE	
S THE WELL ABANDONED BECAUSE OF H	OOKING UP TO A PUBLIC O	R RURAL WATER	GPM			FT.		FT.
YES MO			DEEPENING OF INFORMATION	WELL	DEPTH	DE	ORMATION ESCRIPTION	YIELD
CHECK THE BOX WHICH APPL	IES		WELL WAS DEEPENE	ED		1		
T TO THE DOX WITHOUT ACTU		1	FROM	FT. DEEP				
EREBY CERTIFY THAT THE WELL HEREIN	I HEREBY CERTIFY THAT T		то	FT. DEEP				
SCRIBED WAS ABANDONED IN ACCORDICE WITH THE DEPARTMENT OF NATURAL	DESCRIBED WAS REPAIR ANCE WITH THE DEPARTME	ENT OF NATURAL	WAS THE WELL DISIN	FECTED?	-			
RESOURCES REQUIREMENTS FOR THE ABANDONMENT OF WELLS.	RESOURCES REQUIREM REPAIR OF WELLS.		WAS THE WELL DISI	LUIEU!				
ITPACTOR'S SIGNATURE	DATE	1	□ YES □	NO				
quirance (. Kose	3/25	196						



MISSOURI DEPARTMENT OF MISSOURI DEL A.....

OFFICE USE ONLY	DATE RECEIVED					
REF. NO. 103900	CHECK NO.					
ROUTE	TRANSMITTAL NO.					
STATE WELL NUMBER	CROSS REFERENCE NO.					
CHECKED BY	ENTERED					
	Ph 1	Ph 2	Ph 3			
APPROVED BY	DATE APPROVED					

DIVISION OF GEOLOGY AND	STATE WELL NUMBER	CROSS	REFERENCE NO.			
LAND SURVEY						
MONITORING WELL	CHECKED BY	ENTERE	Ph 1 Ph 2 Ph 3			
CERTIFICATION RECORD	APPROVED BY	DATE AF	PPROVED			
FORMATION SUPPLIED BY OWNER						
E NAME	WELL NUMBER					
HUSSMANN CORPORATION/SECO PRUD	vc75 RW-1		STATE	ZIP CODE		
025 Old Hwy 100 East	WASHINGTON		MO	63090		
Pennis Dubitsky (Hussmann Colfon	ation)		314-298-	6541		
ADDRESS	ST Louis		STATE	ZIP CODE 63044		
ORMATION SUPPLIED BY MONITORING WELL CON			710	63077		
LOCATION OF WELL OW LOCATION IN COUNTY FRANCE OW LOCATION IN	FROM NEAREST TOWNS			GE ON ALL ROADS TRAVELED		
TION PLAT ELEVATION AREA NO.	See attached	Locati	ion Plan	\longleftrightarrow		
SMALLEST % LARGES		plan	, ,,,,,	\downarrow		
SMALLEST %	1 7 1 1	7 1001				
SEC. 25 TWN. 44 N.RNG. RIM						
LAT. 38. 32. 29. LONG. 90. 58. 3	I					
CRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VISIT			ITORING WELL TRACTOR'S NA	INSTALLATION		
re attached location plantsite pla	· · · · · · · · · · · · · · · · · · ·			(#002004 PM)		
			nnon! Wils			
		1	LING CONTRA	CTOR'S		
		NAMI	ted Geosci	ence		
NOTE: Record the fraction of a foot in decimal, not in inches,	OCKING CAP - Y / (Circle one)					
Top of Riser	ROTECTIVE CASING	1	FINSTALLATION	(Below) EX FLUSH MOUNT		
	rotective casing, ypo: Concrete Vas H	_	WATER LEVEL	M FLUSH MOUNT		
Ground , I	ize: 6'x 2,5'x 2' lore Hole Diameter: - 14,5 "					
	WEEP HOLE - Y /(N) (Circle one)	10	1	OM MEASURING POINT		
this column to be supplied in			F STATIC WATER LEVI	EL		
the Feet from Surface column		ELEVAT	ION OF MEASURING F			
	PROTECTIVE CASING SEAL Type: Concrete SECement Slurry	To	RING POINT IS	\		
Depth to bottom	RISER PIPE		P OF RISER PIPE			
of Protective Casing Seal: NA CLOMEY SIG	Length:		HER			
(Concrete)	Diameter: 6" IO Type of Material: 7VC		R ROTARY	AUGER		
(2/4 /	BORFHOLE	{	-	TYPE 10 10		
	DIAMETER: 14. Sin.	1	VERSE	A2/4 OTHER		
	Type: Bentonite Sturry	l	ALIZERS USED	OTHER		
	☐ Cement Slurry ☐ Non Slurry Bentonite		S, AT	3		
Depth to Base	BENTONITE SEAL. Type: Bentonite Siurry	I I	STAINLESS STEEL			
of Annular Seal: 4.5 SILT tr Sand	Dr Non Slurry Bentonite	₩ NO				
	SECONDARY FILTER PACK	I	LE CASED WELLS			
Depth to Base of P 5	Type: Sand (Optional)			L AS BUILT DIAGRAM		
Depth to Base of Secondary Fifter Pack:	Grain Size:	INCL	UDING TYPE AN	D SIZE OF ALL CASING,		
Depth to Top of the Screen: 9.5	PRIMARY FILTER PACK			ND GROUT USED.		
	Type: Sand Manufactured	DATE W	ELL CONSTRUCTION	WAS COMPLETED		
	Grain Size:			T THE MONITORING WELL		
Depth to	WELL SCREEN			WAS CONSTRUCTED IN IE DEPARTMENT OF NAT-		
Bettom of the Screen:	Slot Size: O.O 1O"	URAL		QUIREMENTS FOR THE		
	SUMP DETAILS		THE (MONITORING W			
Plug Back	Length: O. 5 Ft. Diameter: 6 In.	Zu	rence ('.	Kose-		
Plug Back Total Depth: 50.0 Mid fc sales	Type: PVC	1	NUMBER	3/25/5/0		
Total Depth 52.0 St. A silry clay	TYPE OF BACKFILL:		URE (DRILLING CONT			
,			and	teh		
		PERMIT	NUMBER	DATE		

RECYCLED PAPER



OFFICE USE ONLY	DATE RECEIVED					
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ROUTE	TRANSMITTAL NO.					
STATE WELL NUMBER	CROSS REFERENCE NO.					
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NATURAL RESOURCES	110072	THAT THE TO.
DIVISION OF GEOLOGY AND	STATE WELL NUMBER	CROSS REFERENCE NO.
LAND SURVEY	CHECKED BY	ENTERED
MONITORING WELL	CHECKED 61	Ph 1 Ph 2 Ph 3
CERTIFICATION RECORD	APPROVED BY	DATE APPROVED
FORMATION SUPPLIED BY OWNER		
75 MANG	WELL	NUMBER
Seco PRODUCTS / HUSSMANN Corporat TEADDRESS	$\stackrel{\cdot}{n}$ R	(4) - 6
TE ADDRESS	CITY	STATE ZIP CODE
	Washington	MO 63090
025 Old Huy 100 East	The state of the s	TELEPHONE
Dennis Pubitsky (Hussmann Core	aration)	314-298-6541
ADDRESS	CITY	STATE ZIP CODE
2999 ST Charles Rock Road	STLOVIS	MO 63044
FORMATION SUPPLIED BY MONITORING WELL CO	ONTRACTOR	
FORMATION SUPPLIED BY MONITORING WELL CO	DNIHACION	
LOCATION OF WELL COUNTY FRANK		LOCATION TO THE WELL INCLUDING MILEAGE ON ALL ROADS TRAVELED
OW LOCATION IN	FROM NEARES	ST TOWNS OR HIGHWAYS
CTION PLAT AREA NO	See A	TTACHED Location: Sirc Plaz
+++++		
SMALLEST % LARG	EST 1/4	
	V4	
25 1/16 21		
SEC. 25 TWN. 44 N,RNG. R.I.	E OR W	
LAT. 38. 32. 29" LONG. 90. 58.	36 "	
SCRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO VI		MONITORING WELL INSTALLATION
SEE attached Location Site Plan		CONTRACTOR'S NAME
THE ATTACHED COCATION STOP THE		Lawrence Rose W
		Shannon's WILSON
		DRILLING CONTRACTOR'S
1		NAME
NOTE: Record the fraction of a foot		
in decimal, not in knohes.	-LOCKING CAP · Y / (N) (Circ	United de office?
Top of Riser Elevation:	PROTECTIVE CASING	
	Type: Carbon Steel	☐ ABOVE GROUND ☑ FLUSH MOUNT
·	Size: 48" ID	STATIC WATER LEVEL
Ground Surface Feet from Description of	Bore Hole Diameter: 4 14,5	3 ' A FEET FROM MEASURING POINT
Elevation: Ft Surface Formattion	WEEP HOLE · Y /(N) (Circle	
this column to		DATE OF STATIC WATER LEVEL
be supplied in the Feet from		2/15/96 ELEVATION OF MEASURING POINT
Surface column	PROTECTIVE OLGING	
	PROTECTIVE CASING S Type: Concrete Coment Slurry	MEASURING POINT IS
		TOP OF RISER PIPE
Depth to bottom of Protective 3.0	RISER PIPE Length:	OTHER
Casing Seal:	Diameter: 6" ID	DRILLING EQUIPMENT
Come I	Type of Material: PVC	
		TYPE 1044 10
	BOREHOLE DIAMETER: ~ /4	4.5 m. REVERSE HSA
		ROTARY DOTHER
	Type: Bentonite Sturry	
	Cement Sturry Non Sturry Bent	1 10
3.0	BENTONITE SEAL	☐ STAINLESS STEEL
Depth to Base	Type: Bentonite Siurr	TV DOTHER
of Annular Seal: SILT CLAY	Non Sturry Ben	I IV NO
	Length of Seal:	FL MULTIPLE CASED WELLS
Depth to Base of C	Type: Sand	(Optional) SUBMIT ADDITIONAL AS BUILT DIAGRAM
Bentonite Seal: 8.0 SILTICLAY Depth to Base	Manufactured	SHOWING WELL CONSTRUCTION DETAILS
of Secondary	Grain Size:	INCLUDING TYPE AND SIZE OF ALL CASING,
Depth to Top	PRIMARY FILTER PAC	HOLE DIAMETERS, AND GROUT USED.
of the Screen: \$1.5 SILTICLAY	Type: Sand	DATE WELL CONSTRUCTION WAS COMPLETED
	☐ Manufactured Grain Size: _ G A	
	Length: 34	I HEREBY CERTIFY THAT THE MONITORING WELL
•	WPLL CARPEN	HEREIN DESCRIBED WAS CONSTRUCTED IN
Bottom of LI < SILT CLAYEY	Length: 30	ACCORDANCE WITH THE DEPARTMENT OF NAT- URAL RESOURCES REQUIREMENTS FOR THE
the Screen: 41.5 Sich Frank	Slot Size: 0.010 Type: PVC wi	CONSTRUCTION OF MONITORING WELLS
	SUMP DETAILS	SIGNATURE (MONITORING WELL CONTRACTOR)
	Longth: ひ・SFt.	Solvina (:Kose-
Plug Back Total Depth: 42.0	Diameter: 😉 In.	PERMIT NUMBER DATE
Original	Type: PVC	002004 PM 3/25/96
Total Depth: (2.0)	TYPE OF BACKFILL:	SIGNATURE (DRILLING CONTRACTOR)
		Man & Acho
		PERMIT NUMBER DATE



MISSOURI DEFAIL MATURAL RESOURCES MISSOURI DEPARTMENT OF

OFFICE USE ONLY	DATE RECEIVED				
REF. NO. 103902	CHECK NO.				
ROUTE	TRANSMITTAL NO.				
STATE WELL NUMBER	CROSS REFERENCE NO.				
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APPROVED BY	DATE APPROVED				

DIVISION OF GEOLOGY AND	STATE WELL NUMBER	CROSS	CROSS REFERENCE NO.			
LAND SURVEY MONITORING WELL	CHECKED BY	ENTERE	ENTERED Ph 1 Ph 2 Ph 3			
CERTIFICATION RECORD	APPROVED BY	DATE A	Ph 1 Ph 2 Ph 3 DATE APPROVED			
ORMATION SUPPLIED BY OWNER						
NAME	WELL NUMBER	7		я		
Seco PRODUCTS / HUSTMANN Corporati			STATE	ZIP CODE		
25 Old Hwy 100 East	Washington		HO TELEPHONE	63090		
Dennis Dubitsky (Hussmann)	Сіту		314 298-6541 STATE ZIP CODE			
1999 St Charles Rock Road	ST. Louis		Mo	63044		
ORMATION SUPPLIED BY MONITORING WELL C	ONTRACTOR					
LOCATION OF WELL COUNTY FRANK	EDOM NEADEST TOWNS			AGE ON ALL ROADS TRAVELED		
TION PLAT TO PLAT TION PLAT AREA NO	Sex Atlach	Locatio	in ! Site Pla	26		
	GEST ¼		7.72 7	` \ \ \ \ \		
+++++	1/4					
SEC. 25 TWN. 44 N,RNG. KI	W/ FORW					
LAT. 38 . 32 29 LONG. 90 58						
CRIBE LOCATION OF THE WELL SO WE WOULD BE ABLE TO V		MON	ITORING WEI	LINSTALLATION		
see attached location -d site Pla	ar	CON	TRACTOR'S N			
			rence Rosen			
			<i>nnen بالارد:</i> LING CONTRA			
		NAMI				
NOTE: Record the fraction of a foot in decimal, not in inches.	LOCKING CAP - Y / (b) (Circle one)	Uni	United Arosciences			
Top of Riser CAP VENT - 6/ N (Circle one) Elevation: PROTECTIVE CASING			TYPE OF INSTALLATION ABOVE GROUND Type of Installation			
	Size: 48" diameter		WATER LEVEL			
Ground Surface Feet from Description of Elevation: Ft. Surface Formattion	Bore Hole Diameter: ~/4, 5" WEEP HOLE - Y / (N) (Circle one)		28. SFEET FR	OM MEASURING POINT		
nformation in this column to	WEEF HOLE 1 / (II) (Grade Gray)	1900	F STATIC WATER LEV	COLUMN TOWN TOWN TOWN TOWN TOWN THE PROPERTY OF THE PROPERTY O		
e supplied in he Feet from			2/15/96 ELEVATION OF MEASURING POINT			
	PROTECTIVE CASING SEAL Type: ☐ Concrete		~490'			
Depth to bottom	RISER PIPE		RING POINT IS P OF RISER PIP	E		
of Protective Casing Seal: 3. D SILT: CLAY	Length:	1 -	HER			
	Diameter: 6" Type of Material: PVC		IG EQUIPMENT	AUGER		
	BOREHOLE	_		TYPE /D'4 ID		
	DIAMETER: ~ 14.5 In. ANNULAR SEAL		VERSE TARY	H SA		
	Type: Bentonite Slurry Cement Slurry	CENTRA	ALIZERS USED			
	☐ Non Slurry Bentonite BENTONITE SEAL		S, AT STAINLESS STEE			
Depth to Base of Annular Seal: 4.0 SILT!CLAY	Type: ☐ Bentonite Slurry Mon Slurry Bentonite		OTHER			
	Length of Seal: 3.0 Ft.	MIII TIP	LE CASED WELLS			
Pepth to Base of Bentonite Seal: 7.0 Shart CLAY	SECONDARY FILTER PACK Type: Sand (Optional)	1 1000000000000000000000000000000000000		L AS BUILT DIAGRAM		
Depth to Base of Secondary Filter Pack: 7.0	Grain Size: SHOWING WELL CONSTRUCTION DE					
Depth to Top of the Screen: 11.5 SILT : CLAY	PRIMARY FILTER PACK			ND GROUT USED.		
	Type: A Sand Manufactured Marie	DATE W	ELL CONSTRUCTION	I WAS COMPLETED		
	Grain Size: CA-9 Length: 40'			T THE MONITORING WELL		
Depth to tr-some sand	WELL SCREEN Length: 35	ACCO	HEREIN DESCRIBED WAS CONSTRUCTED IN ACCORDANCE WITH THE DEPARTMENT OF NAT-			
Bottom of the Screen: 46.5	URAL RESOURCES REQUIREME					
	SUMP DETAILS Length; O. Ft.		a.	VELL CONTRACTOR)		
Plug Back Total Depth: 47.0 SILTY CLAY	Diameter: 💪 In.		NUMBER	DATE		
Original Total Depth: 47.0 SILTY CLAY	Type: PYC TYPE OF BACKFILL:		004 7M	3/25/96		
		SIGNAT	URE (DRILLING CON	TRACTOR)		
		PERMIT	NUMBER	DATE		

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	Ph 1	Ph 2	Ph 3	
APPROVED BY	DATE APPROVED			

/ NA	ATURAL RESOURCES	1					
(DIV	VISION OF GEOLOGY AND	STATE WELL NUMBER		CROSS REFERENCE NO.			
LA	ND SURVEY		······································	FATERER			
	ONITORING WELL	CHECKED BY		Ph 1 Ph 2 Ph 3			Ph 3
CI	ERTIFICATION RECORD	APPROVED BY		DATE API	PROVED		
PMATIO	N SUPPLIED BY OWNER			1			
3) AME	N SOFFEIED BY OWNER		WELL NUMBER				
SECO PROT	NOTE FAX		RW-1				
31' DORESS	[C	OTY .			STATE	ZIP CODE	
5 .3 Old	Highway 100 East	Washingt	* `		MO	630	090
	0 1)			TELEPHONE		
HUSSMANN	Corporation				314-298	1-6541	
VC SS		CITY .			STATE	ZIP CODE	
1. 99 Jt.	. Charles Ruck Read	ST. Louis			Mo	6301	44
N RMATIO	N SUPPLIED BY MONITORING WELL CO	NTRACTOR					
	Maria I	SKETO	CH THE LOCATION TO	THE WELL	INCLUDING MILE	AGE ON ALL	BOADS TRAVELE
-OCATION OF V	LIM		NEAREST TOWNS OR H		INOCODING MICE	AGE ON ALL	1
SE ON PLAT	ELEVATION 4480	580	E SITE PLAN				()
4	AREA NO.						`\\
SM	MALLEST % LARGE	ST ¼					•
+ + + + + + + + + + + + + + + + + + + +		4					
I III -	C 25 TWN 44 NRNG RIV	``					
				,			
AT. 38	32 29 LONG. 90 . 58 . 3	<u>36</u>					
F RIBE LOCAT	TION OF THE WELL SO WE WOULD BE ABLE TO VISI	IT IT		MONIT	ORING WEL	LINSTAL	LATION
5E 511	1E PLAN			1	RACTOR'S N		
h .							
				LAWI	rence R	Wer	
				DRILL	ING CONTRA	ACTOR'S	
	•			NAME			
	NOTE: Record the fraction of a foot in decimal, not in inches.	LOCKING CAP - Y	(Action and		A 0		
		CAP VENT (Y) N (C		Un.1	ed Geos	uence	
	Top of Riser Elevation:	PROTECTIVE CASING			VE GROUND		SH MOUNT
		Size: E ~ 4'		STATIC W	ATER LEVEL		
Ground	. 11 11 1.	Bore Hole Diameter: A	ایس	18			1
Surface ition: F		WEEP HOLE - Y //N		~20	ر FEET F	ROM MEAS	URING POINT
rmation in column to				DATE OF	STATIC WATER LE	VEL	
supplied in Feet from				9/1	2/96		
Surface column	n }				N OF MEASURING	POINT	
•		Type: Conc	ASING SEAL				
			nt Slurry	_	NG POINT IS 1 OF RISER PIF		
lepth to bottom ! Protective	7~3.6	RISER PIPE	62.5 bgs)	OTH		'E	
Casing Seal:	~ 3.6	Diameter: 6	, 0.00		EQUIPMENT		
		Type of Materia	I .			AUGER	
		BOREHOLE				TYPE 1	AZH "HY
		DIAMETER:	~// in.	☐ REV	ERSE		
		ANNULAR SEAL		ROT	ARY [OTHER	
		Type: M Bentoni	te Sturry	CENTRAL	IZERS USED		
		☐ Non Sk	irry Bentonite		AT		
oth to Base		BENTONITE SE			TAINLESS STEE	L	
of Annular Seal:	~ 3.0	Type: ☐ Benton	urry Benionite	MD NO	THER		
		Length of Seat_			CASED WELLS		
th to Base of		SECONDARY FI	LTER PACK (Optional)				
tenite Seal;	~6.0	Menul	ectured		T ADDITIONA ING WELL CO		
of Secondary Filter Pack:	E	Grain Size		INCLU	DING TYPE AN	ID SIZE OF	ALL CASING,
epth to Top the Screen:		PRIMARY FILT	ER PACK	HOLE	DIAMETERS, A	ND GROU	T USED.
CHR ACTERIA	~10'	Type: M Sand		DATE WEL	L CONSTRUCTION	N WAS COMPL	ETED
		☐ Manufi Grain Size	10 - 2.0	911	2196		
	清 臺灣	Length: ~ 4	4'				ITORING WELL
Depth to		WELL SCREEN Length: 40	,		DESCRIBED DANCE WITH T		
Bettom of the Screen:	~ 48.S	Siot Size: O	010	URAL F	RESOURCES R	EQUIREMEN	NTS FOR THE
THE SPINSTER		Type:			RE (MONITORING		
	119.0	SUMP DETAILS Length: 0.5 F		SIGNA IC	TOWN TOHING	ノ.	(C) ON)
Plug Back Total Depth:	49.0 50.5	Diameter: 🌢		PERMIT N	UMBER	DATE	
Orlginal Total Depth:		Type: PVC S		002		10/22	1910
Joran Depth;	124	TYPE OF BACK	FILL		RE (DRILLING CON	TRACTOR)	1 10
			ſ	PERMIT N	UMBER	DATE	



Important Information About Your Geotechnical/Environmental Report

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

